

THE SUPPLEMENT
TO THE
UNITED STATES NAVAL MEDICAL BULLETIN

PUBLISHED FOR THE INFORMATION OF

THE HOSPITAL CORPS
OF THE NAVY

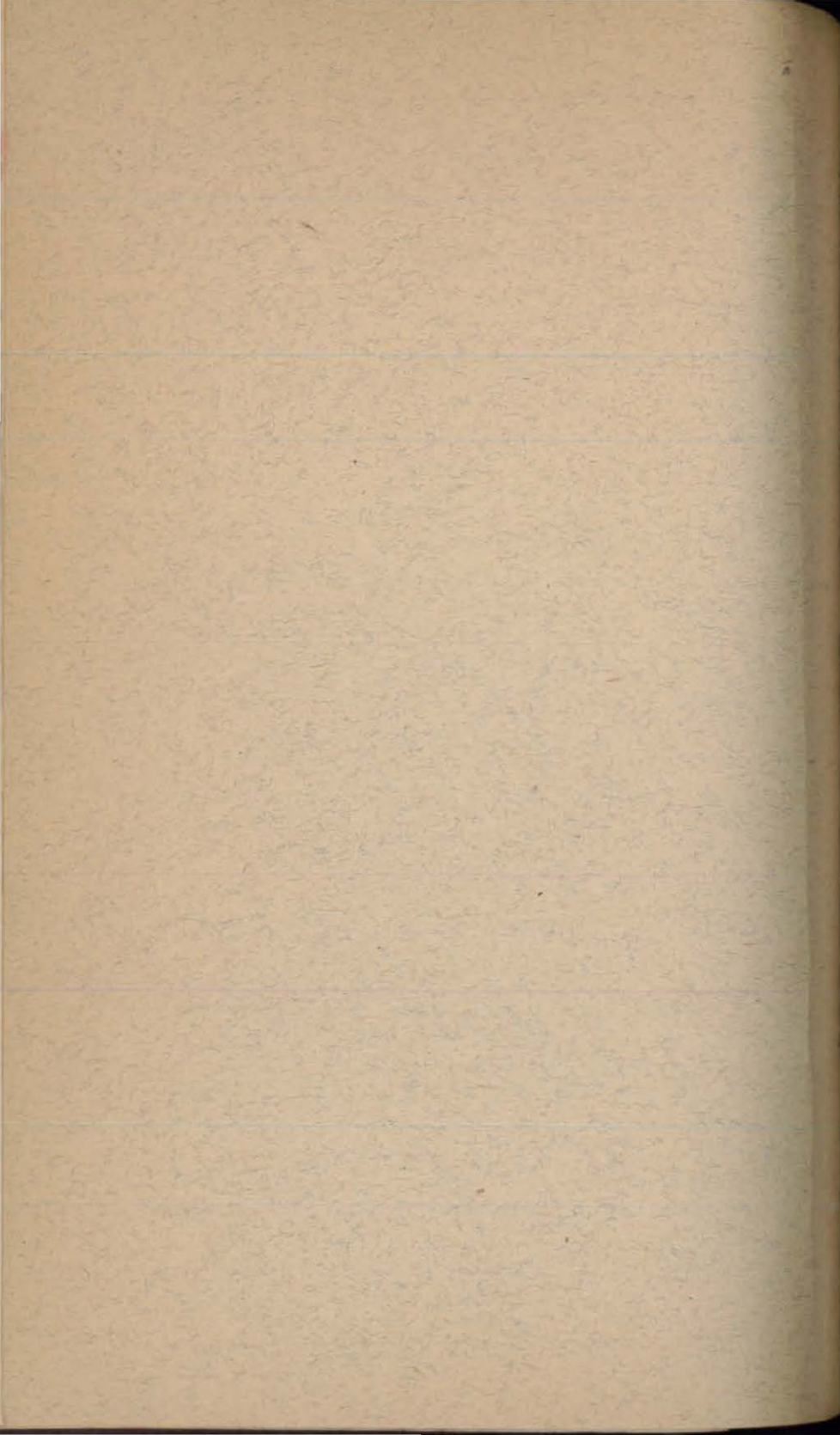
ISSUED BY
THE BUREAU OF MEDICINE AND SURGERY
NAVY DEPARTMENT
DIVISION OF PUBLICATIONS
COMMANDER J. S. TAYLOR, M. C. UNITED STATES NAVY
IN CHARGE

EDITED BY
LIEUTENANT COMMANDER G. F. COTTLE, M. C.
UNITED STATES NAVY

OCTOBER, 1918
(NUMBER 7)



WASHINGTON
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NAVY DEPARTMENT,
Washington, March 20, 1907.

This United States Naval Medical Bulletin is published by direction of the department for the timely information of the Medical and Hospital Corps of the Navy.

TRUMAN H. NEWBERRY,
Acting Secretary.

SUBSCRIPTION PRICE OF THE SUPPLEMENT.

For copies of the SUPPLEMENT address Superintendent of Documents, Government Printing Office, Washington, D. C., inclosing 5 cents in cash or by money order.

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PREFACE.

From the first issue of the United States Naval Medical Bulletin it has been intended as a vehicle of communication with the Hospital Corps, and to be the means of imparting information and instruction to it as well as to the Medical Corps of the Navy. The recent expansion and improvement of the Hospital Corps seems now to justify more direct methods and the material prepared for that body will hereafter be issued in the form of a SUPPLEMENT.¹

Contributions for the SUPPLEMENT are desired from members of the Hospital Corps and from other sources, but the Bureau does not necessarily undertake to indorse all views and opinions expressed in these pages.

W. C. BRAISTED,
Surgeon General United States Navy.

¹The present issue is No. 7. Nos. 1 and 2 appeared incorporated in the July and October issues, 1917, respectively, of the United States Naval Medical Bulletin.

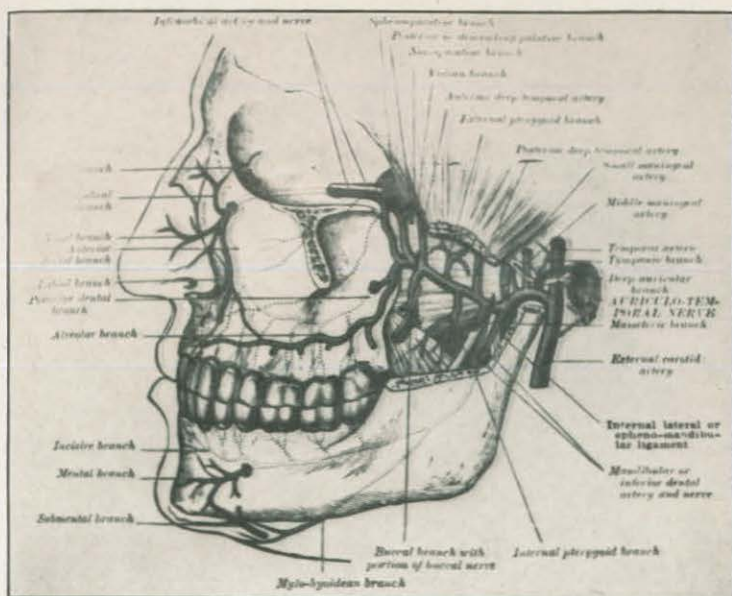
PREFACE

From the first issue of the United States Naval Medical Bulletin it has been intended as a vehicle of communication with the Hospital Corps, and to be the source of important information and instruction. It is well as the Staff of the Navy. The extent of the work and improvement of the Hospital Corps was now to provide more direct methods and the material prepared for that body with greater interest in the form of a SUPPLEMENT. The instructions for the SUPPLEMENT are derived from members of the Hospital Corps and from other sources, but the primary aim is to furnish all those who are interested in the subject with the latest information.

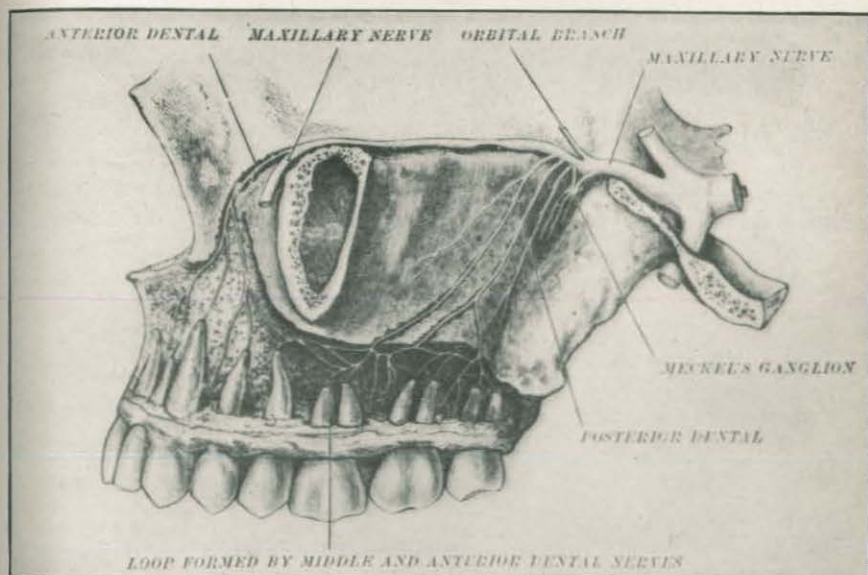
H. C. BARNES

Surgeon General, United States Navy

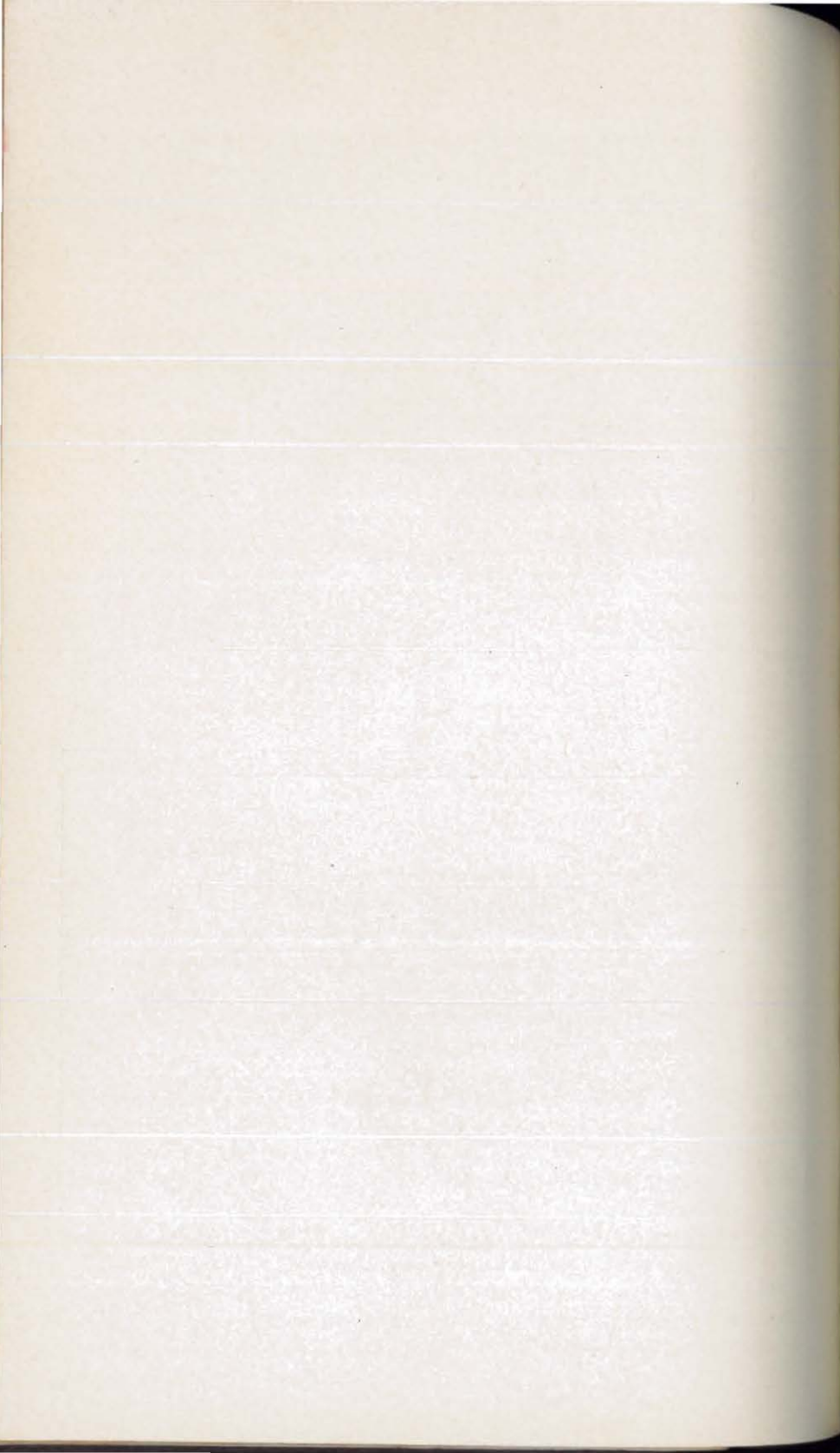
The present issue is No. 7, Vol. 1 and 2, and is published in the form of a Supplement to the United States Naval Medical Bulletin.



Arterial supply for the teeth.



Nerve supply to the teeth.



DENTAL ANATOMY.

By GEORGE M. DAMON, D. D. S., College of Dentistry, University of Minnesota.

What is dental anatomy?—Dental anatomy is the science of the structure of the teeth and their correlated parts.

Define a tooth.—A tooth is one of the hard, bony specialized appendages borne by the jaws, its primary function being the seizure and mastication of food.

What are the fundamental parts of a tooth?—The fundamental parts of a tooth are the crown, neck, root or roots, pulp cavity, and pulp.

Define crown.—The crown of a tooth is that portion which is covered with enamel and which projects from the tissues in which the root is fixed.

Define root.—That portion of the tooth that is fixed in the bony walls of the alveolus or socket and is covered with cementum.

Define neck.—The neck of a tooth is that constricted area at the junction of the crown and root, usually occupying a portion of each.

Define pulp cavity.—The pulp cavity of a tooth is a central cavity with outlines closely resembling those of the tooth itself, and containing the dental pulp. That portion of the pulp cavity within the crown is called the pulp chamber and that portion within the root, the root canal.

Define dental pulp.—The dental pulp is the soft tissue which fills the pulp chamber and root canals of the teeth, composed of nerves, blood vessels, and connective tissue.

Of what tissues are the teeth composed?—The teeth are composed of four tissues:

1. Enamel: The calcified epithelial tissue covering the crowns of the teeth. A very hard, vitreouslike substance, composed of hexagonal prisms, with a common direction at right angles to the dento-enamel junction or line marking the union of the enamel and dentin. The enamel forms a protective cap for the softer underlying dentin.

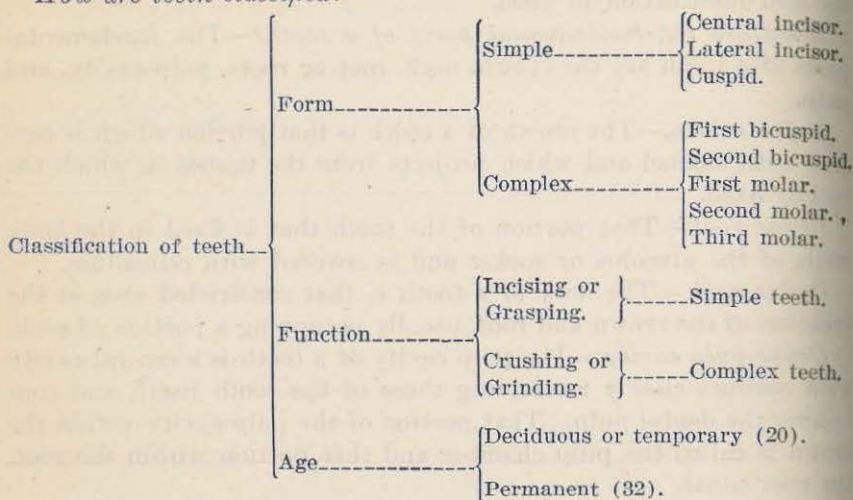
2. Dentin: The dentin forms the main body of the tooth, is covered with enamel on the crown, and cementum on the root. It forms a complete caplike protection for the pulp from which it is formed. In structure we have an organic matrix traversed by long fine canals or tubes, the dental tubules, which pass in a wavelike course from

the pulp toward the surface. Occupying these tubules we have minute fibers radiating from the pulp by means of which the dentin is not only nourished but rendered highly sensitive.

3. Cementum: A tissue resembling bone which covers the outer surface of the roots. It is thinnest at the neck of the tooth and gradually increases in thickness as the apex of the root is approached. It is in this tissue that the fibers of the peridental membrane, which serve to attach the tooth to its socket, are embedded.

4. Pulp tissue: The tissue which fills the central cavity or pulp cavity of the tooth. It is composed of a network of nerves, blood vessels, and connective tissue.

How are teeth classified?



Describe the arrangement of the permanent teeth.—There are 32 permanent teeth, 16 uppers embedded in the two superior maxillary bones, and 16 lowers in the mandible. They are arranged in the form of two curves, the uppers describing the segment of a larger circle than the lowers. As a result the uppers slightly overlap the lowers. If we pass an anterior posterior perpendicular plane through the center of the mouth we will establish the median line and thus divide the teeth into rights and lefts.

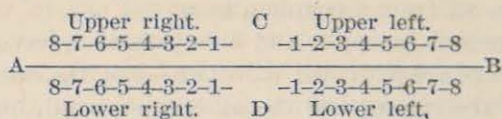
This division then gives us four groups—upper rights, upper lefts, lower rights, and lower lefts—eight teeth in each group. The teeth in each group, beginning at the median line, are named as follows: Central incisor, lateral incisor, cuspid, first bicuspid, second bicuspid, first molar, second molar and third molar.

How can we designate a given tooth?—First we determine whether it is an upper or lower, then whether it is right or left, and finally add the group name, as “upper right first molar.”

What is meant by annotation?—Annotation is designating any given tooth by lines and figures.

Annotate upper right first molar.— 6]

Explain the system of annotation.—



Let the line A-B represent the plane between the upper and lower teeth, the line C-D the median line, the figures 1-2-3, etc., the teeth in the order of their arrangement. Now, if we wish to designate a given tooth, we take that angle of our figure which would represent its location and place within the figure which corresponds to its numerical position in the arch.

How are the surfaces of the teeth named?—Each tooth has five surfaces:

- (1) Labial (1-2-3) or buccal (4-5-6-7-8).
- (2) Mesial—all teeth.
- (3) Distal—all teeth.
- (4) Lingual—all teeth.
- (5) Incisal (1-2-3) or occlusal (4-5-6-7-8).

Define labial.—Pertaining to the lips. The surfaces of the incisors and the cuspids next to the lips.

Define buccal.—Pertaining to the cheeks. The surfaces of a tooth next to the cheek. Applied to bicuspid and molars.

Define mesial.—Toward the median line. Those surfaces of the teeth which, as they stand in the arch and follow its curve, are toward the median line, are called mesial surfaces.

Define distal.—Away from the median line of the face, following the curve of the dental arch. The surface of a tooth most distant from the median line.

Define lingual.—Next to or toward the tongue, as lingual surface.

Define incisal.—The cutting edge of the incisors and cuspids are regarded as incisal surfaces.

Define occlusal.—That surface of a bicuspid or molar tooth that makes contact with a tooth of the opposite jaw when the mouth is closed. (The morsal surfaces of the bicuspid and molars.)

What variation do we find in the number and location of the roots of the various teeth?—The upper incisors and cuspids each have a single root. The upper first bicuspid generally has two, a buccal and lingual, but may be provided with only one. In the upper second bicuspid a single root is generally found. The upper molars are provided with three roots, a mesio-buccal, disto-buccal, and lingual. In the first molar the point of trifurcation is near the neck, and the terminal ends or apices are quite widely separated. In the second

there is a tendency to fusion and flexion of the roots. This is increased in the third molar, where we often find the three roots fused into one, with a marked disto-buccal flexion. The upper third molar is quite variable in its root formation. We may have three, four, or five roots given off from a common base.

The lower incisors, cuspids, and bicuspids each have a single root. The lower molars are provided with two—one, the mesial, under the mesial half of the crown, and the other, the distal, under the distal half of the crown. There is the same tendency to increased fusion and flexion of the roots of the lower molars in passing from the first to the third as we find in the upper molars. In the lower third molar, like the upper third, we find the greatest variation in the root formation. The number may be increased or diminished, and all generally have a marked distal inclination.

Define apex.—The terminal end of a root is called the apex.

Define alveolar process.—The projection of the maxillary bone which envelopes the roots of the teeth and forms their alveoli.

Define alveolus.—A socket. The cavity in the process of the maxillary bone in which the root of the tooth is fixed.

Define peridental membrane.—The membrane or tissue which occupies the space between the root of the tooth and the alveolus of the jaw. Called also pericementum, dental periosteum, periodotium, and alveolo-dental membrane.

How are the teeth attached to the jaw?—The attachment is by implantation. Each root is embedded in its socket or alveolus and attached by means of an intervening membrane, peridental membrane.

Although there is slight movement of the tooth in its socket, this joint is classed with the immovable variety.

What is the interproximate space?—The V-shaped space bounded by the proximate surfaces (mesial or distal) of adjoining teeth, and the border of the septum of the alveolar process between their necks. Normally this space is filled with gum tissue. Also called septal space.

What are embrasures?—An opening that widens outward as an opening in a wall for cannon. That portion of the interproximate space that widens toward the buccal or labial or toward the lingual.

Define contact point.—The point on the proximate surface of a tooth which touches a neighboring tooth.

What is the difference between occlusion and articulation?—Occlusion is the relation existing between the upper and lower teeth when brought together normally and held firmly in that position, while articulation is the relation of the teeth during the various movements of the jaw after being brought together in occlusion.

What is the relation of the upper teeth to the lowers in normal occlusion?—The incisal edges of the upper six anterior teeth slightly

overlap the incisal edges of the lowers (over-bite) and the buccal cusps of the upper bicuspid and molars. This causes the lingual cusps of the uppers to fall in the fossæ of the lowers, and the buccal cusps of the lowers to fall in the fossæ of the uppers. The mesio-distal diameter of the lower central incisor is less than the same diameter of the upper central; this shifts each of the remaining lower teeth slightly to the mesial of its fellow in the upper jaw, thereby meeting two teeth in occlusion. This relation brings about the interlocking or interdigitation of the cusps of the uppers with the lowers which makes for efficiency in mastication.

What is the temporomandibular articulation?—The joint formed by the condyloid process of the mandible and the glenoid fossa of the temporal bone.

To what class of joints does the temporomandibular articulation belong?—This joint belongs to the diarthrodial class and is further subdivided into the condylarthrodial or an articulation having on one bone an elongated surface called "condyle" and on the other a glenoid fossa. This permits all the movements of a ball-and-socket joint except axial rotation.

What different forms of movement do we have in the temporomandibular articulation?—There are three chief movements:

1. A ginglymoid or hinge accompanied by a slight gliding action, as in opening or shutting the mouth. In opening the condyle turns like a hinge on the fibro cartilage, the fibro cartilage together with the condyle glides forward until checked by the eminentia articularis, should the condyle by excessive movement (as in convulsive yawning, extraction of lower molars, or traumatic injuries) glide over the summit of this ridge and slip into the zygomatic fossa, the mandible is dislocated.

2. A horizontal gliding movement in an anterior posterior direction as in the act of incision. Both condyles moving forward and downward simultaneously.

3. The oblique rotatory or lateral movement which is the chief movement in chewing or grinding. If the symphysis is moved only from the center to one side and back again, the condyle of that side rotated upon the vertical axis of its neck, and the opposite condyle moves forward, downward, and inward, but in the ordinary grinding movement, one condyle advances and the other recedes, and then the first recedes while the other advances, slight rotation taking place in each joint meanwhile.

Trace the course of the blood supply to the teeth.—Heart, aorta, common carotid artery, external carotid artery, internal maxillary artery. The teeth receive their blood supply from branches of the internal maxillary.

Give in outline form the divisions and branches of the internal maxillary artery supplying the teeth—

Internal Maxillary Artery.	Maxillary or first division.	{ Inferior dental or mandibular.	{	Lower bicuspid and molars.
				Incisive. { Lower centrals, later- als and cuspids.
	Pteryoid or sec- ond division.			
	Sphenomaxillary or third division.	{ Alveolar or supe- rior maxillary.	{ Posterior { Upper bicuspid dental. } and molars.	
				Infra-orbital. { Upper centrals, later- als and cuspids.

What is the source of nerve supply to the teeth?—The teeth receive their nerve supply from divisions of the fifth cranial nerve.

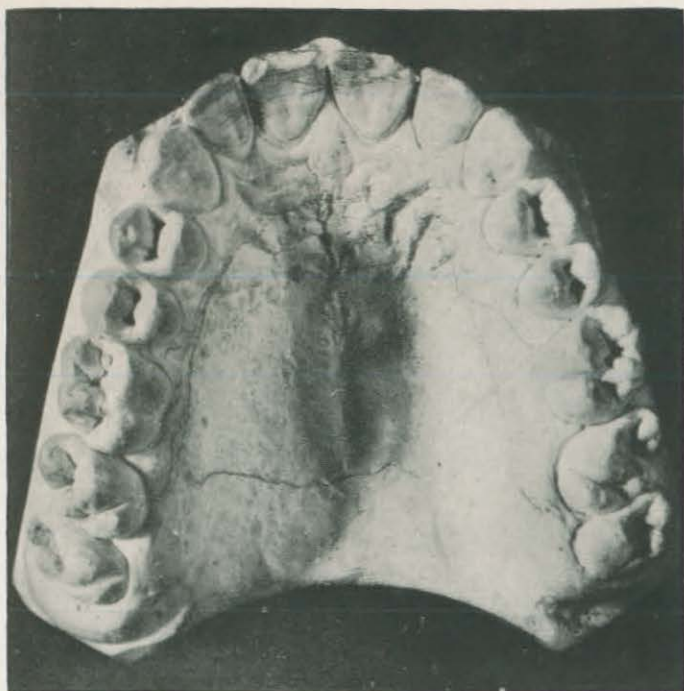
By what other terms is the fifth cranial nerve known?—Trigeminal or trifacial nerve.

What is the origin of the trigeminal nerve?—The trigeminal nerve arises by a motor root and a sensory root at the pons Varolii, passes anteriorly to the apex of the petrous portion of the temporal bone. Here the sensory root forms the semilunar or Gasserian ganglion, from which arise the three divisions ophthalmic, maxillary, and mandibular. The upper teeth receive their supply from branches of the mandibular or third division.

Give in outline form the divisions and branches of the trigeminal nerve supplying the teeth.

Fifth cranial, tri- facial or trigem- inal.	1. Ophthalmic.	{	Posterior.	{	Upper molars.
			Superior.		
			Dental.		
	2. Superior max- illary.	{	Middle.	{	Upper bicuspid.
			Superior.		
			Dental.		
	3. Inferior maxil- lary or mandibu- lar.	{	Anterior.	{	Lower centrals, lat- erals and cuspids.
			Superior.		
			Dental.		
	3. Inferior maxil- lary or mandibu- lar.	{	Inferior.	{	Lower molars and bicuspid.
			Dental.		Incisive. { Lower centrals lat- erals and cuspids.

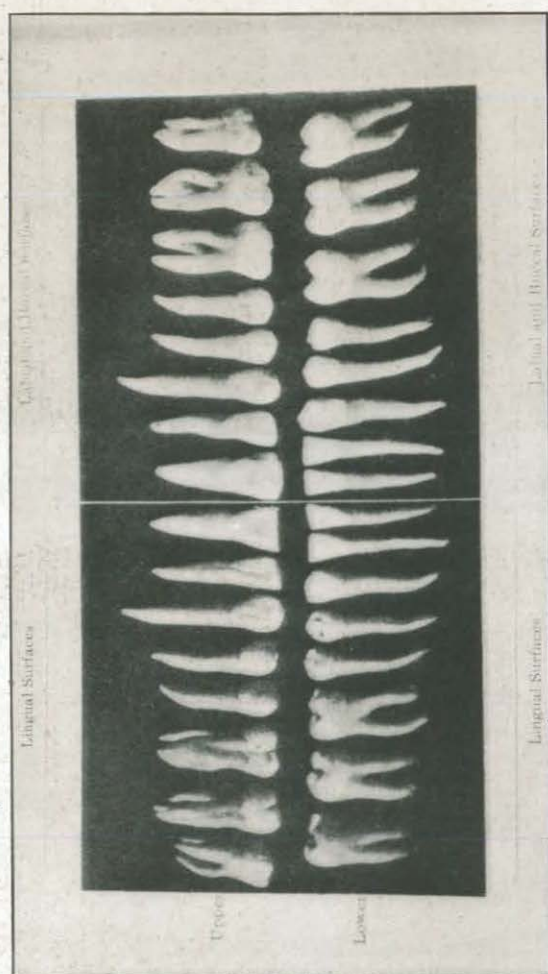
Locate the mandibular foramen.—The mandibular foramen is located near the middle of the internal surface of the ramus of the mandible. It transmits the inferior dental nerve and artery.



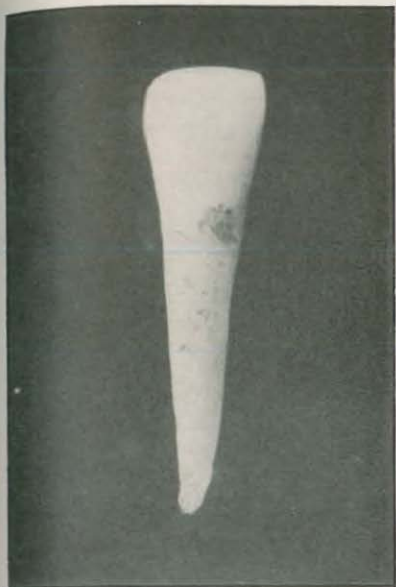
Teeth and hard palate viewed from below.



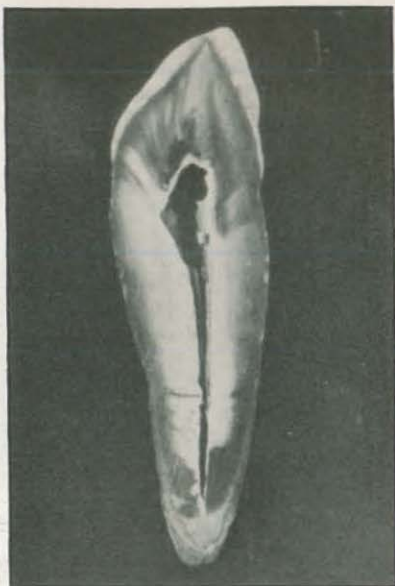
Normal occlusion of teeth.



Adult teeth.



An incisor.



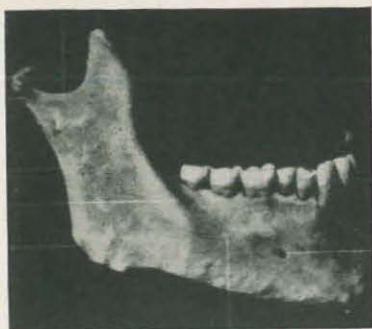
A cuspid.



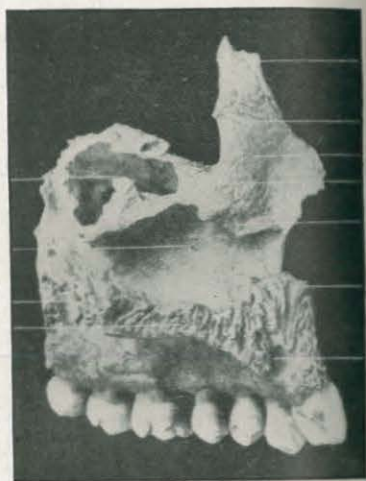
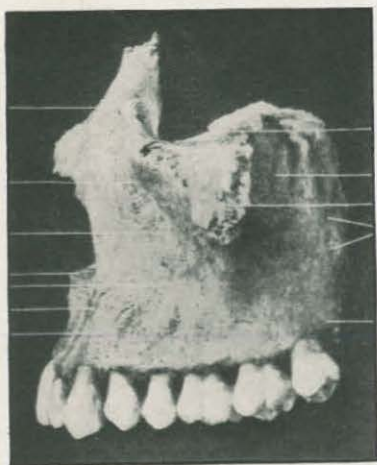
A bicuspid.



A molar.



Inferior maxillary bone.



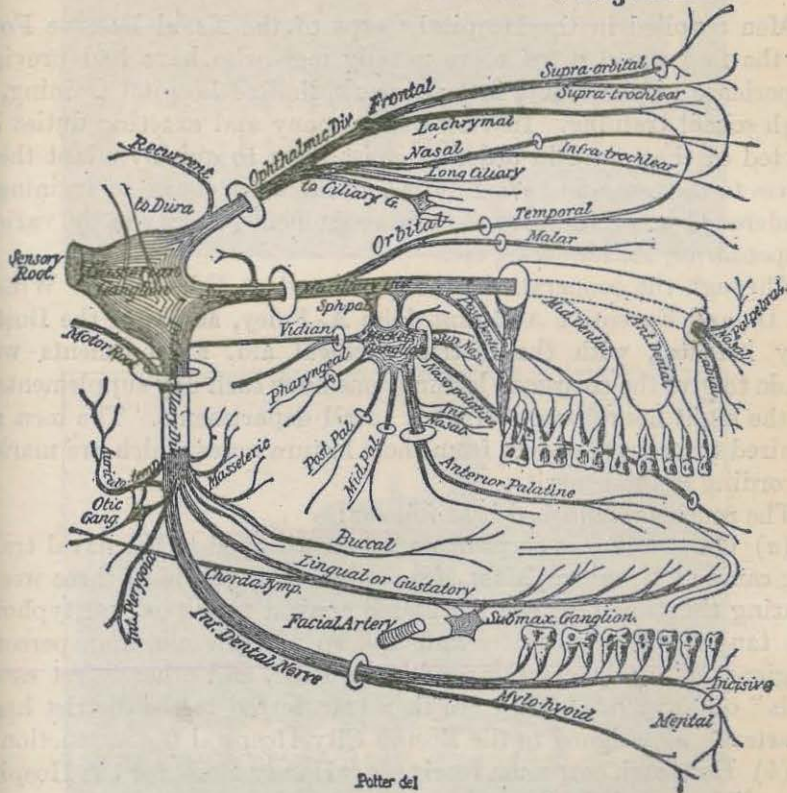
Superior maxillary bone.

Locate the mental foramen.—The mental foramen is located on the external surface of the mandible, generally between the first and second bicuspid at the base of the alveolar process, below the apices of the bicuspid. Transmits the mental nerves and vessels.

Locate the infra-orbital foramen.—The infra-orbital foramen is situated just below ($\frac{1}{2}$ c. m.) the lower margin of the orbit, almost exactly above the first bicuspid. Situated within the bone opposite this foramen is the anterior superior dental nerve.

THE CRANIAL NERVES.

5th Nerve, Trigeminus



From Quiz Compend of Anatomy—Potter
By permission of P. Blakiston Co., Phila.

Locate the posterior palatine foramina.—The posterior palatine foramina are located at the posterior angles of the hard palate at the level of the third molars. The anterior palatine nerves emerge through these foramina.

Locate the incisive or anterior palatine foramen.—This foramen is located on the palatal surface of the maxilla, in the median line, behind the central incisors. It transmits the naso-palatine nerve.

Locate the posterior dental foramina.—The posterior dental foramina are located in the region of the maxillary tuberosity behind the zygomatic process and above the root apices of the upper molars. These foramina are in varying number and transmit the posterior superior dental nerves, which supply the upper molars.

CLASS OF INSTRUCTION FOR HOSPITAL CORPS, NAVAL RESERVE FORCE, FIRST NAVAL DISTRICT.

By J. F. DURKIN, Pharmacist (T), United States Navy.

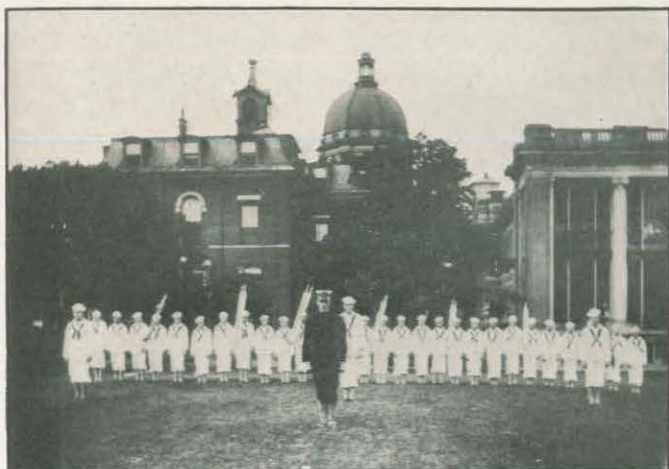
Men enrolled in the Hospital Corps of the Naval Reserve Force or the first naval district are usually men who have had previous experience in pharmacy, first aid work, limited hospital training, or high school training. In view of the many and exacting duties expected of them, and in order to assist them to quickly adapt themselves to the new and varied duties, an intensive course of training is tendered them preliminary to their assignment for duty at the various dispensaries, section bases, etc.

Through the cooperation of Superintendent Edmund W. Wilson, M. D., and Executive Assistant John A. Foley, M. D., of the Boston city hospital, with the district medical aid, arrangements were made to give the corpsmen lectures one hour each day supplementary to the eight hours practical work in all departments. The men are required to prepare papers from their lecture notes which are marked according to their merit.

The routine established is as follows:

(a) On enrollment corpsmen are first assigned to the naval training camp at Hingham, Mass., for a quarantine period of three weeks. During this time they are inoculated against smallpox and typhoid; are taught the proper care and upkeep of their clothing, personal hygiene, prompt recognition of bugle calls, and other "first essentials" of Navy life. They are then transferred to the district headquarters and assigned to the Boston City Hospital for instruction.

(b) Here each corpsman receives a "Handy Book for the Hospital Corps," hears brief talks on hospital rules, uniform regulations, naval etiquette, discipline, etc., and is assigned to either starboard or port watch. Each watch period is of eight hours; the first period from 8 p. m. to 4 a. m., and the second period from 12 noon to 8 p. m., allowing half an hour for meals. The daily lectures by the resident and visiting physicians are given from 12.30 to 1.30 p. m., thus permitting of both watches being present. Port and starboard watch alternate each week, each having the first period one week and the second period the following week.



Hospital Corps, United States Naval Reserve Force, under instruction at
Boston City Hospital.



Hospital Corps, United States Naval Reserve Force, under instruction at Boston City Hospital.

(c) One duty section or watch is required to report each morning at 7.50 a. m., and the entire class answers muster at 12 noon. Their duty assignments are changed every Tuesday, so that all may have the benefit of varied duties. A daily report, containing data relative to duty assignments, lectures given, remarks, etc., is forwarded to the district medical aid. Both watches are given instructions in clerical procedure, preparation of bureau returns and blank forms, official letters, etc., from 4 to 5.30 p. m., twice a week. These hours, on other week days, are used for company and litter drills. Pharmacist J. F. Durkin, United States Navy, is charged with the instruction in clerical work, discipline, drills, etc. Each corpsman is required to attend at least one post-mortem demonstration and at least three hours per week on the preparation of special diets under the supervision of an experienced dietitian, in addition to their regular duty assignments.

Incident to the constant demand for trained men from the various section bases, dispensaries, etc., throughout the district, it has only been found possible to allow this training to continue for a period of from four to six weeks. The course, although short, has proved beneficial inasmuch as each man has at least an insight of the duties expected of him and is of valuable assistance to the medical officers throughout the district, when assigned to regular duties. Each corpsman is required to have at least one hour in night study at home from the Handy Book and is quizzed from this text once weekly. A complete record of the men—personality, appearance, ability, and merit—is kept in each case by the executive assistant of the hospital.

TRAINING SCHOOL FOR HOSPITAL APPRENTICES AT THE BOSTON CITY HOSPITAL.¹

By JOHN A. FOLEY, A. B., M. D., Executive Assistant, Boston City Hospital.

The Boston City Hospital, at the suggestion of Capt. John M. Edgar, medical inspector of the first naval district, has established a training school for hospital apprentices. This, like all courses for men in the service, is of an intensive nature and is already bringing very successful results.

The district embraces all the New England States, and men from the entire area are centered at the hospital for training. After enlistment the men are sent to a naval station for a period of quarantine and drill. During this time they also receive their inoculations and vaccinations. When this period is over they are detailed to the hospital for training as hospital aids or male nurses.

¹ Reprinted from "The Boston Medical and Surgical Journal," Aug. 1, 1918.

The instruction is given by members of the hospital staff, under the direction of the acting superintendent, Edmund W. Wilson. This institution offers an ideal field for instruction of this sort, because of the immense variety of cases treated here. The hospital in all its departments contains 1,061 beds, 650 of which are in the main hospital, where the men are receiving training. The accident department receives on an average of 100 cases a day for first aid. Here instruction in all branches of first aid is furnished.

The surgical out-patient department treats over 300 cases each morning, and here instruction is given in the aftertreatment of wounds and operative cases. In the genito-urinary out-patient department the men are instructed in the care and treatment of such cases, special care being given to the value of systematic and prolonged treatment.

On the operating floor there are from 20 to 30 major operations a day, including many emergencies. Here the men are instructed in the setting up of an operating room, the care of patients recovering from ether, and the preparation and sterilization of surgical dressings and instruments.

In the wards the men are instructed by the head nurses and their assistants in the nursing care of patients, and among other things they are given special instruction in—

The care of rooms, sweeping, and dusting.

Care of set bowls, wall stands, and utensils.

The use of hot and cold applications, including the making of fomentations and poultices.

The care of rubber goods.

The making of surgical supplies, pads, sponges, etc.

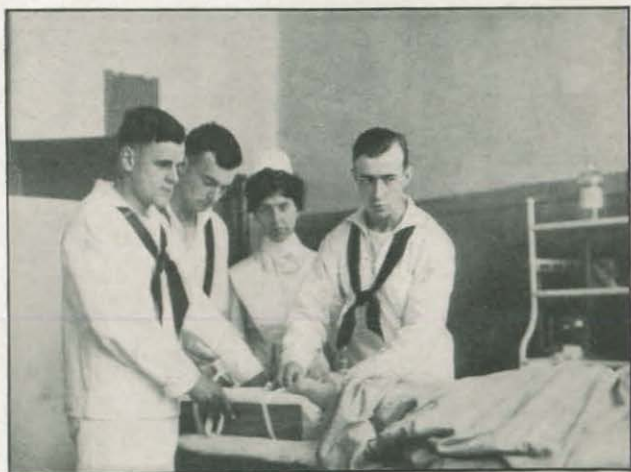
The use of slings, binders, and supports.

Most of the apprentices are graduate pharmacists and consequently are well acquainted with antiseptics, disinfectants, and deodorants, and the preparation of solutions. They are instructed in the principles of heat radiation and its relation to body temperature. They are instructed in the taking and recording of pulses and temperatures. They are taught very carefully how to give alcohol sponge baths, bed baths, besides the regular care of the mouths and backs of patients.

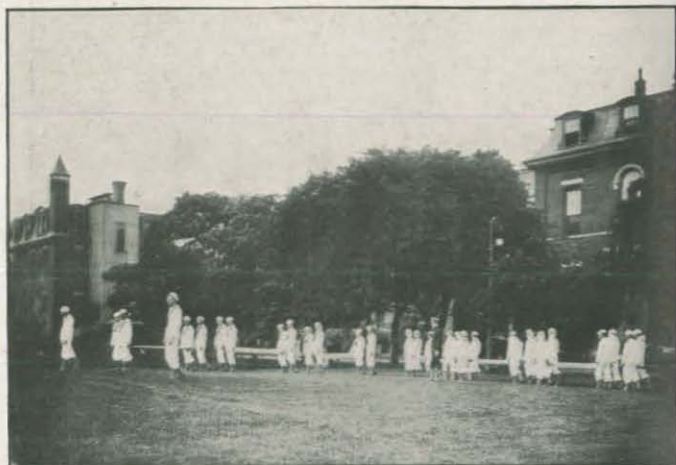
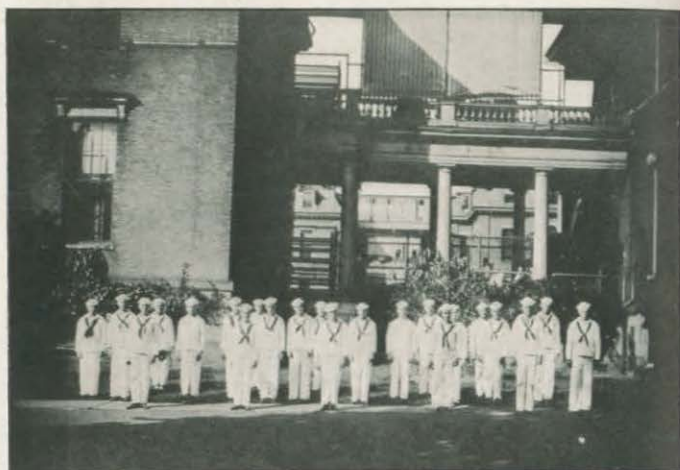
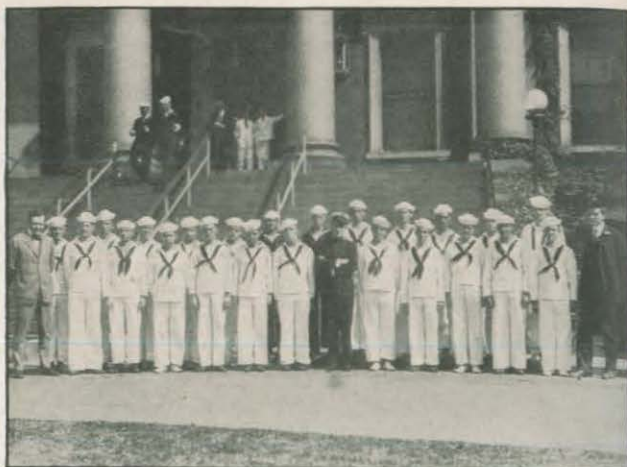
In addition to the practical work, there are demonstrations in anatomy and physiology and pathology; and every student must witness at least one post-mortem examination.

There are special courses in X-ray, laboratory technique, and dietetics.

To these courses men are sent who show special desire for this sort of instruction.



Hospital Corps, United States Naval Reserve Force, under instruction
at Boston City Hospital.



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In the X-ray department care is taken to instruct men as technicians, so that they may be of assistance to the doctors later. They are taught how to take plates and how to develop them, how to give bismuth meals and enemata, and how to index and file plates which have been taken. In addition there are special lectures to the entire class in which the theory of X-ray is explained.

The class in laboratory technique is conducted in the clinical laboratory of the hospital. Here the men are taught the fundamental principles of urinalysis, blood counts, the staining of smears, and examination of stools and stomach contents. The men in this department are under the constant supervision of a nurse trained in this sort of work.

The hospital dietitian gives six afternoon demonstrations to a group of 12 men at a time. In this class the men are taught how to prepare dishes especially appetizing for the sick. The men are very quick to pick up this branch of the work and enjoy it very much.

At present there are about 32 men on duty at the hospital and they are divided into two watches, port and starboard. One watch comes on duty at 8 a. m. and goes immediately to the stations assigned. The second watch comes on duty at 12 noon, when both watches go to lecture for an hour. At 1 p. m. the men go to dinner, which is furnished by the hospital. At 1.30 p. m. both watches return to duty until 4 p. m., when they go to drill or class in formation, popularly termed paper work, which is conducted by Pharmacist J. F. Durkin. At 5 p. m. the afternoon watch goes to supper, returning to duty at 5.30 p. m. and remaining on duty until 8 p. m.

The supervision of the men at the hospital is under the direction of Dr. John A. Foley, who places the men, arranges their lectures, and keeps their records.

Considerable interest has been aroused by the experiment, and numerous inquiries have been made regarding the work. The arrangement has worked out very satisfactorily both for the men and the hospital. The men learn rapidly and remember what they learn. They are considerable help to the hospital while on duty in that they furnish man power which allows the hospital to split its very meager day force so as to supply the shortage at night.

ADMINISTRATION OF MEDICINE AND TREATMENT.

Medication and treatment may be given in many ways, by external application to the skin (inunctions, baths, packs, poultices, stupes, etc.); by internal administration beneath the skin (hypodermic injections, drugs, serums, antitoxins, hypodermoclysis, etc.); in the

muscles (intramuscular injections, massage, etc.); through the natural orifices of the body—the mouth (pills, tinctures, elixirs, etc.), the rectum (enemata, enteroclysis), the trachea (intratracheal insufflation), the nose and mouth (inhalations), the ear (irrigation), the eye (irrigation), the urethra (catheterization, irrigation, etc.); into the veins (intravenous); into closed serous sacks or spaces (lumbar puncture, thoracentesis, etc.).

Each method of administration of medicine or of treatment requires of the hospital corpsman a certain amount of anatomical and pharmaceutical knowledge, but above all it requires of him a knowledge of the technique of administration or of preparation of materials and patient prior to administration. In the Hospital Corps Handy Book, page 5, these matters are dealt with quite briefly. A book published by W. B. Saunders & Co., of Philadelphia, called "Modern Methods in Nursing" (\$2.50), tells in great detail just how medicines and other forms of treatment are administered and in addition gives a very comprehensive review of the entire subject of nursing, both medical and surgical. At naval hospitals the members of the Navy Nurse Corps teach methods of medication and treatment by precept and by example.

Much of the ability of the hospital corpsman at sea is measured by his knowledge of the right way to administer medication and by his manual dexterity in carrying out the orders of the doctor for the care of the sick and injured. When the doctor orders an incision, the treatment may be administered in such a manner as to disgust the patient and thereby minimize the beneficial effect that might otherwise have been obtained. When a hypodermic needle must be plunged into a patient who has an individual extreme sensitiveness to pain, it can be done quietly and efficiently, in a way to minimize the patient's anticipation and thereby minimize the actual pain of the procedure, or the needle can be so paraded before the patient as to emphasize its sharpness and its length and thereby produce in the patient's mind an increase in his natural dread, and turn a slight necessary twinge into a pain never to be forgotten. When a stupe is to be applied to a sick man, if properly done he is not burned and the desired effect is produced. If not properly carried out, the sick man is unnecessarily disturbed and the entire procedure becomes a wet and dismal failure.

At the Hospital Corps School, University of Minnesota, our hospital corpsmen are taught nursing by the nurses attached to the hospital at Minneapolis. From the course in vogue there the following notes have been taken in the hope that the publication of these practical steps in the care of the sick may be of service to the hospital corpsman who is earnestly trying to do his duty by his shipmates.—[Ed.]

RULES FOR THE GIVING OF MEDICINE.

Medicine case must be kept locked.

1. Never speak to anyone nor allow anyone to speak to you while giving medicine.
 2. Always give *exactly* what is ordered, *on time*.
 3. Give *minims* when *minims* are ordered. *Drops* when *drops* are ordered.
 4. Read the label on the bottle three times:
 - (a) Before taking from the shelf.
 - (b) Before pouring from the bottle.
 - (c) After pouring from the bottle.
 5. Always shake bottle before pouring out medicine.
 6. While pouring medicine, hold with label on upper side, to avoid defacing it and before replacing the bottle wipe rim with gauze kept for that purpose.
 7. While pouring hold glass with mark of the quantity you require on level with your eye.
 8. Always re-cork bottles immediately after use.
 9. Give acids and medicines containing iron through glass tube.
 10. *Never* allow one patient to carry medicine to another.
 11. Never record a dose as given until patient has actually taken it.
- To make normal saline solution from saturated salt solution:

Normal saline solution—.9 per cent.

Water, 1 litre—1,000 cc.

Salt, 9 gms.

1 gm. = $15\frac{1}{2}$ grs.

9 gm. = $139\frac{1}{2}$ grs.

Water 1,000 cc. to salt $139\frac{1}{2}$ grs.

Saturated saline solution—

Water, 500 cc.

Salt, 90 gms.

Water, 500 cc.; salt, 1,395 grs.

Water, 1 cc. contains salt 2.79 grs.

Water, 50 cc. contains salt, $139\frac{1}{2}$ grs.

Water, 1,000 cc.	} Normal saline solution.
Sat. salt sol. 50 cc.	

HYPODERMIC INJECTIONS.

Given when we need quick and reliable action.

Hypodermic tray containing: (1) Receptacles for cotton pledgets, (2) bottle of alcohol, (3) bottle of water, (4) hypodermic tablets, (5) alcohol lamp, (6) table spoon, (7) small forceps, (8) medicine glass.

1. Remove wire from needle and test for leakage.
2. Replace wire and wrap in cotton to boil.
3. Sterilize by boiling in table spoon.

4. Sterilize barrel with alcohol and rinse with sterile water from spoon.

5. Flame the forceps, pick up tablet and insert into barrel, then draw up to the mark M, X to XV of sterile water.

6. Pick up needle with forceps and attach.

7. Dissolve tablet by shaking; then expel air.

8. Wrap in alcohol sponge and carry to bedside.

The safest place for hypodermic injection is on the outer surface of arm, leg, or thigh. Give here unless otherwise ordered.

Wash part with alcohol and insert needle quickly; gently press piston to inject the fluid.

Remove needle and knead spot gently for a few seconds with gauze sponge.

Clean needle and barrel with alcohol by filling and emptying syringe. Leave syringe absolutely clean.

Dry the wire also before replacing in needle.

Leave all articles clean and dry.

MUSTARD PASTE OR PLASTER.

Mustard, 1 part; flour, 2 to 4 parts for adults. Add to mustard and flour tepid water and make smooth paste.

Spread on gauze or cheesecloth, and cover with gauze. If patient's skin is tender, oil the surface before applying paste.

Carry to bedside between folds of a towel.

Apply side with one thickness of gauze to skin and cover with towel.

Leave until skin is well reddened, generally 15 to 20 minutes.

After removing, wash skin with soap and water.

Poultice.—Poultices should be spread on piece of old muslin and covered with gauze or cheesecloth. Poultices must be covered with a protector of oiled muslin, or flannel, and kept in place by a binder or bandage.

Poultices for the chest should be shaped to fit around neck and armpits.

To prepare poultices.—Spread on board or platter a towel folded the required size; next put oiled muslin, then muslin on which spread thickly and evenly ($\frac{1}{4}$ inch thick) the poultice mixture. When spreading it on muslin leave a 2-inch margin all around the edge to turn back over the poultice.

Cover with piece of gauze 3 inches wider than the poultice every side; fold this margin under, between the muslin and the protector. Carry to the bedside in a warm towel.

Test the heat of a poultice by holding it to your face. Apply slowly (patient can stand it hotter), and cover with protector and then a binder or bandage.

Poultices should not be left on longer than one hour.

Remove, dry the skin; if the skin is very red, oil it. If another poultice is not to be applied immediately, cover the area with flannel or a pad of gauze and cotton.

Formulas and directions.—

Mustard poultice: Mustard, 1 part; flaxseed meal, 6 to 8 parts for adult; 3 cups boiling water and $2\frac{1}{2}$ cups meal, to make poultice for chest or lumbar region. Mix flaxseed and mustard together, crushing all lumps. Add slowly to boiling water, as it boils, stirring all the time with knife or spatula. When just thick enough to drop from knife, remove from flame, heat it well and spread on muslin.

Flaxseed or linseed poultice: Make in same manner as mustard poultice, except that mustard is omitted.

Turpentine stupes: Apply to prescribed area as ordered, a mixture of 1 to 4 parts oil and 1 part turpentine for adults. This may be repeated after two or three stupes, if skin will bear it.

Bring to bedside: Stupe wringer, a basin of boiling water, two pieces of old blanket or flannel, 1 towel, 1 protector, a blanket to cover patient.

Dip a piece of flannel in the wringer into boiling water; wring very dry, open flannel and shake quickly to incorporate air.

Apply with cover and protector.

Keep patient covered, but watch area for excessive redness.

Apply fresh stupes either every 3 minutes for 15 minutes of the hour, or every 15 minutes for several hours as ordered.

After stuping, cover area with flannel or pad of non-absorbent cotton.

DIRECTIONS FOR GIVING HOT PACK.

Cover patient with old blanket, folding down upper bedclothes to foot of bed.

Place under patient a rubber sheet between two blankets.

Remove nightshirt and wrap in blanket.

Apply ice cap or compress to head.

Line a foot tub with rubber sheet, put in four well-filled hot-water bottles, and after soaking two single blankets in water about 150° , wring quite dry, and put in tub, covering with ends of rubber sheet.

Place one hot blanket doubled under patient. Put other blanket over patient, tucking in snugly around neck, arms, and legs.

Put hot-water bottles around patient, cover with rubber sheet; draw up under rubber sheet and blanket and tuck in closely.

Replace bedclothes, and leave 20 to 30 minutes.

Remove wet blankets and rubbers.

Leave wrapped in dry blanket for one hour.

Rub with alcohol, replace nightdress and remove blanket.

COLD SPONGE BATH.

Protect bed with rubber sheet. If patient objects to rubber sheet, put bath towel under him.

Pin binder around loins, leaving the part of the body being sponged exposed during bath.

Place cold compress on head and hot-water bag at feet.

With gauze sponge, and temperature of water as ordered, take long strokes, using as much water as possible.

First sponge patient anteriorly; then turn and sponge back.

Remove wet sheets and binder; roll patient in dry sheet and give light friction until dry.

WARM OR HOT SPONGE BATH.

Give bath between blankets.

Keep patient covered. Otherwise proceed as above.

DIRECTIONS FOR GIVING SEDATIVE PACK.

Cover patient with a blanket, remove upper bedclothes, and place under a rubber sheet.

Wring out two doubled sheets in water, 85°; slip one under patient and bring up well under arms.

Put another sheet over patient, under top blanket, tucking it in well around neck, between arms and body, and between legs.

Bring rubber sheet up over patient and tuck in securely, especially around neck.

Apply cold compresses to head and hot-water bottles to feet.

Leave patient in pack from 20 to 30 minutes.

Remove sheets, disturbing as little as possible.

Wipe dry with a warm towel.

GENERAL INSTRUCTIONS CONCERNING THE APPLICATION OF HEAT AND THE TEMPERATURE OF ENEMATA, DOUCHES, IRRIGATIONS, AND INFUSIONS.

Patients under ether must be left wrapped securely in a blanket until entirely conscious. Under no conditions is a hot-water bag to be put inside this blanket.

The temperature of water used in filling hot-water bags, preparing and administering enemata, douches, irrigations, and infusions is stated below.

Under no circumstances are these instructions to be altered except by a definite order from the physician.

	Temperature. Fahrenheit
1. Hot-water bags	120° F.
2. Enemata and rectal irrigations	98-100°
3. Irrigations, surgical	110°
4. Infusions	115-120°

ARTICLES REQUIRED FOR GIVING ENEMATA.

A sheet or blanket to cover patient.

A rubber protective.

A bedpan.

A rectal tube or catheter. Catheter is preferable if enema is to be retained.

An irrigator, or funnel and tubing.

An enamel quart measure, if funnel is used.

The liquid as ordered.

Amount.—Nutritive enemata, 6 to 8 ounces; purgative, adults, 2 to 3 pints; saline, 1 to 8 pints; soapsuds, 2 to 3 pints; emollient, 5 to 6 ounces; stimulating, as ordered; sedative, as ordered.

Temperature.—About 100°, except stimulating—110° to 112°.

Method of giving.—Bring articles ordered to bedside.

Set vessel containing liquid, covered with small rubber, in basin of warm water. Have catheter or rectal tube well lubricated with vaseline.

Protect bed with rubber protective.

Put patient in position ordered. Expose patient as little as possible.

Expel air from catheter or rectal tube by filling with fluid, insert *very* gently about 8 inches into rectum. Inject fluid slowly.

Remove catheter or tube quickly, but gently, and hold folded towel to anus if there is desire to expel fluid.

After using rectal tube or catheter, cleanse thoroughly, first with cold water, followed by hot water and soap. Boil for five minutes in 5 per cent salt solution, 1 drachm salt, 2 pints water.

Purgative enemata should be retained 15 to 20 minutes.

Cleansing enema should be given once in 24 hours to patient taking nutritive enemata.

Formula.—Medicated purgative: Noble's turpentine, 1 drachm; glycerine, 2 ounces; mag. sulph., 3 ounces, water, 4 ounces.

Purgative: Make thick soapsuds by agitating Ivory or Castile soap in water about 105°.

Nutritive: As ordered.

Emollient: Dissolve 1 teaspoonful starch in little cold water; add slowly boiling water and boil 1 to 2 minutes. Allow to cool to 103° before giving.

Add opium, as ordered, just before giving enema.

Stimulating: As ordered.

Sedative: As ordered.

Enteroclysis.—Articles required: Douche can with rubber tubing; small rubber catheter with metal clamp; thermometer; salt solution, or tap water, amount ordered.

The irrigator is suspended so that the top of fluid is from 6 to 14 inches above bed.

The length of time and amount of liquid will be ordered by a physician.

The irrigator must be refilled before it becomes empty.

The solution should be maintained at temperature of about 100°. This may be done by suspending an electric globe in the can, and retaining heat by keeping can well covered.

EAR IRRIGATION.

Purpose: To relieve pain and inflammation; to remove impacted cerumen and pus.

Preparation: Can and tubing; towel; curved basin; irrigator tip.

Method: If patient is in sitting position, have him hold the basin close against the neck under the affected ear, tipping the head slightly to that side.

If the patient is in bed bring him over to the edge of the pillow and slip a small rubber sheet under the head and the curved basin close up under the ear.

Insert the tip not over a quarter inch into the external auditory canal and with the can placed about 6 inches above the patient's head. Allow the solution to flow gently in—do *not* use force as some of the solution may be forced into the inner ear and set up further trouble.

Solution should be about 105° to 110°. If used to relieve pain it may be used 110° to 115°. Hot irrigation is frequently used to relieve the reflex pain following removal of tonsils.

NASAL DOUCHE.

Purpose: To cleanse; to reduce congestion and inflammation.

Preparation: Can and tubing; basin to catch solutions; towel; gauze handkerchief; normal saline.

Methods: Fasten the towel about the neck.

Have the patient sit with head bent forward (ears above nose).

Have patient keep mouth open constantly and breathe through mouth.

Expel the air from tubing and insert into the nostril which is most occluded; solution will flow from the other.

Precautions: Considerable danger of fluid and infective material from the throat entering one of the Eustachian tubes and causing middle-ear infection.

1. Therefore solution must be warm, as it is less irritating; not so likely to cause coughing.

2. Do not use force. Have the can only a few inches above the patient's head.

3. Keep the head bent forward, mouth wide open.

4. Stop douche if patient chokes.

Purpose: To cleanse and to relieve inflammation.

Preparation: Can and tubing, or bulb and basin of solution; cotton pledgets for cleansing; basin with a straight edge to catch the solution; towel.

Method: Have the patient lie with his head to the foot of the bed so that you may stand directly behind him. Tip his head to the affected side and place the basin close to the side of the face so it will catch all solution that overflows.

Always irrigate from the inner canthus outward.

Dry with pledgets and treatment has been completed.

Precautions: Never touch the eye with irrigation tip. Do not use force. Evert the lids if necessary to cleanse.

SHOCK.

By GEORGE F. COTTLE, Lieutenant Commander, M. C., United States Navy.

Shock may be defined as a condition that may accompany or follow injury. The outward appearance of a man in this condition is similar to a man who has lost a lot of blood. Pallor, mental dullness, and a weak thready pulse, or no pulse at all, are the easily observed and outstanding evidences of this condition. Shock may be slight in degree, short in duration, and the patient may recover readily by being made to lie down and wait till recovery occurs. Shock may be of longer duration and of such severity that the most careful attention and treatment is needed to save life. In time of war, it may be, often is, of so serious a nature that recovery is impossible, no matter how careful and able the treatment may be. Shock is of interest to the hospital corpsman, for it is one of the conditions in which first aid to the injured or wounded, properly administered, may prevent death. In time of war, by proper understanding of shock and its prevention, the hospital corpsman may, and frequently does, save many lives that without his intelligent first aid could not be saved.

Have you seen a man operated on in the dispensary for some slight condition—the opening of a boil, the sewing up of a scalp wound—who went through the ordeal with a smile on his lips, and who, after all was over, had beads of cold sweat stand out on his forehead and wrists, and then after a moment of giddiness fainted “dead” away? Such a fainting presents an appearance not unlike that of one in a condition of shock, except that the man who has fainted is, as a rule, for a brief moment unconscious, while a man in a condition of shock will be able to answer simple questions either readily or with some difficulty. The man who has fainted has undergone a brief period of severe nervous tension produced by a combination of

circumstances, apprehension of pain, actual pain, fear or discomfort produced by the sight of instruments, operating paraphernalia, blood, etc., and the smell of disinfectants, drugs, etc. While undergoing the ordeal of the slight operation the man is perhaps able to stand its severe nervous strain because he is sustained by his will to "stand it like a man." When the operation is over, however, his overstimulated nervous system has a sharp reaction, his blood pressure falls, his pulse becomes weak perhaps to the disappearing point, he feels "light headed," and may fall to the deck with a crash, or be eased down to the recumbent position by the hospital corpsman, nurse, doctor, or bystander.

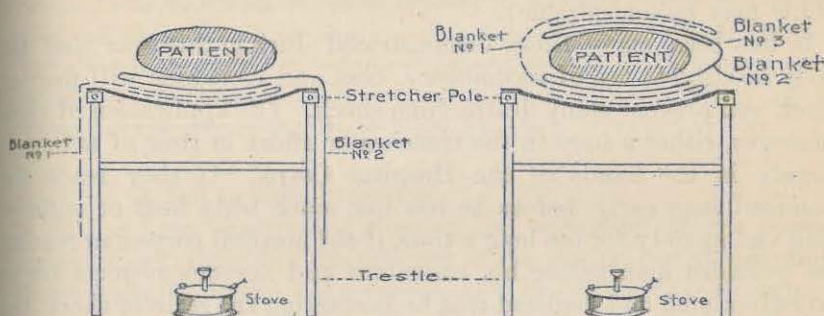
For the purpose of drawing a rough, clinical comparison, it may be said that this condition of fainting "dead away" is not unlike what might be termed an acute attack of shock. Recovery from this condition occurs automatically. The brief moment of unconsciousness and giddiness forces the man to a lying-down position; this takes all strain away from the vascular system, relieves the work of the heart, and in a moment or so the vasomotor and nervous systems regain their tone to a sufficient degree for the heart to do its work again and the man comes back to consciousness. Following such a "fainting away" there is a period of lassitude lasting from a few minutes to a few hours with pallor and a tendency to giddiness, but these symptoms and signs soon wear off if the man is kept quietly lying down and warm. The hospital corpsman who thoroughly understands this condition will not leave the side of a man undergoing even a slight operation. He will watch him sharply for signs of faintness and continue to watch him after the operation until he can make him lie down covered with blankets, in order that actual fainting may be prevented. Failure to realize that a man may faint sometimes results in the man's leaving the sick bay to faint on deck or elsewhere away from proper care.

If watchfulness and prevention do not prevent fainting and the condition occurs, its treatment is as follows:

1. Recumbent position for patient;
2. Heat to body—warm blankets;
3. Time enough for the nervous and vascular systems to react.

On the battle field or on board ship during battle conditions men receive injuries and go through the same stages of nervous overstimulation and reaction as occur in the above-described condition of "fainting away," but, of course, in most cases to a much greater degree. The excitement of fighting, of winning, the stimulus of the presence of other men, all striving to fight and to win, first exhilarate the individual and produce in him a state of nervous excitement which give him for a time the "strength of two men." The excitement of battle, the tension which he is undergoing, make

him capable of expending a greater amount of energy, of doing far more than he possibly could in "cold blood." Just at this time, when his muscles are overworked, his brain overstimulated, his nervous system keyed up to the highest pitch, he receives a bullet wound, a fracture, or a more serious injury. The injury does not at once put him out, he fights on, perhaps not even knowing that he is injured, so filled is his mind with the roar of guns, the bursting of shells, and so tense are his nerves from the necessity of the situation. The pain of the injury fails to register in his brain. Many a man has fought all day to discover after the action was over that he had received an injury of which he knew nothing until hours later. If, however, the injury is sufficiently serious—a serious fracture, a wound of important nerves, vessels or viscera, or one due to the crushing, tearing, or penetrating effect of a shell fragment, the pain of the injury, whether the man is or is not conscious of it, adds to his



Two blankets folded so as to give 4 thicknesses above and 4 below the patient.¹

already overtaxed nervous system, adds to his fatigue, the result of hours and perhaps days, with loss of sleep and insufficient food until, with or without loss of blood, he becomes faint and pale and finds himself out of the fight. Injured seriously, he is not in a condition to quickly recover without assistance. His nervous system is not capable of sharply reacting merely because he has fallen. He is in need of help. At this moment he should be reached by a hospital corpsman, and given the necessary first-aid treatment.

1. Recumbent position, stretcher.
2. Heat, warm blankets, hot drinks, tea, alkalies.
3. Transportation to a dressing station, to field hospital.

These preventative measures, if applied early enough, may keep him from entering a state of shock from which it may be difficult to bring him out. Aboard ship, when the stretcher bearer goes out to pick up the wounded, the need for blankets on each stretcher is very real, and the seriously injured man should be carefully wrapped in blankets at once, the first-aid packet applied if necessary, tourniquet used if

¹ Reproduced from Keen's "War Wounds." 1918 edition.

serious bleeding from a large vessel is present, and rapid, careful transportation to the dressing station undertaken. At the dressing station, the first-aid prevention of shock should be continued. If possible, the injured man should be allowed to remain in the blankets in which he was first wrapped. He should be disturbed as little as possible; boots, outer clothing, etc., should not be taken off at this time, except in so far as may be necessary to get at his wound or to remove wet clothing which may lower his body temperature. Here at the dressing station in addition to recumbency and heat in the form of warm blankets, he should be given hot drinks of water or tea (aromatic spirits of ammonia, alcohol, etc., are not always indicated here). If pain can not be relieved by an adjustment of his position or dressing, morphine should be given, preferably by hypodermic, either grain $\frac{1}{8}$, repeated, if needed, or, if time for repeated dose does not allow, a larger dose given at the outset (there are cases in which morphine may be undesirable).

It has been many times demonstrated during this war that the early intelligent use of recumbency, heat and morphine will prevent shock and prevent many deaths from shock. The application of these measures, either ashore in the trenches or afloat in time of action, is largely in the hands of the Hospital Corps. If they reach the wounded man early, before he has lost much body heat or suffered pain and anxiety for too long a time, if the hospital corpsman reaches the wounded man before his vasomotor and nervous systems are so overstimulated and depleted that he is entering the state of shock, the first-aid treatment will be the determining factor in saving many lives. If the wounded man is not reached shortly after the receipt of an injury, first-aid care will still be somewhat preventative, and of the greatest importance. There are certain conditions among which may be mentioned fracture of the femur, compound fracture in general, multiple wounds, severe and extensive burns, severe crushing injuries, hemorrhage, that are especially liable to produce a state of shock. The transportation of these serious cases should be undertaken by hospital corpsmen with the utmost dispatch, and yet with a degree of gentleness in lifting and placing on the stretcher. During the transportation the injured man's body heat should be conserved, and to this end he should be carefully wrapped in blankets so that the blankets are both under as well as over him. If possible, hot drinks should be given even before reaching the dressing station, and it may be that under certain circumstances, morphine is indicated before transportation is begun.

It has been found during this war that by taking the stretcher, the blankets, and hot drinks right up to and into the firing line, lives which otherwise would have been sacrificed are saved; that by preventative measures directed against shock and infection the

mortality from war wounds has been very greatly reduced. The nearer the hospital corpsman and the doctor to the actual firing line, the earlier the wounded man is brought under intelligent treatment, the larger the percentage of recoveries from even the most severe and terrible wounds.

The first-aid preventative treatment of shock may therefore be summarized to-day in practically the same terms that it was summarized before this war, as follows:

1. Recumbency.
2. Heat.
3. Morphine.

The hospital corpsman, however, will be interested to know that the most prominent surgeons have studied this common and frequent accompaniment of injury in thousands of cases on the battle fields of this war, and they have learned many interesting and valuable facts which have added greatly to our knowledge of the condition of the patient in shock. The contributions which these men have made to the knowledge of the physiology of this condition are so many that it would be out of place to discuss them all here. However, two facts stand out quite clearly:

1. Acidosis.
2. A fall in blood pressure.

It has been determined that at the beginning of the condition called shock, there is a disturbance in the mechanism of maintaining the alkalinity of the body tissues, and this disturbance results in a condition of acidosis. The blood-pressure apparatus has shown us that in shock there is a marked fall in the blood pressure, especially in diastolic blood pressure. Because we know that acidosis occurs, alkalies have been added to the treatment. Because we know that in shock there is a fall in blood pressure, the use of adrenalin to produce an improvement in the patient's condition has a rational and clear basis.

In the treatment of shock, when the case reaches the surgeon, may be mentioned the following:

1. Recumbency and quiet.
2. *Heat*, hot drinks, hot blankets, warm room, warm bed or stretcher.
3. *Alkalies*, by mouth.
Sodium bicarbonate, drachm 1, in hot water or tea, three or four times.
Sodium bicarbonate, intravenously.
4. Measures to raise the blood pressure.
Adrenalin, intramuscularly and intravenously.
Gum arabic, intravenously (administration of carbon dioxide by rebreathing).
5. Morphine, when indicated.

PANDEMICS.

By CARROLL L. FOX, Surgeon, United States Public Health Service.

(This paper was written August 1, 1918.)

There have appeared recently in newspapers and other publications many reports of a mysterious malady which has occurred in different parts of the world and which has been variously called "Spanish influenza," "Flanders grip," etc. This disease is in reality true influenza or "la grippe," and is caused by a small bacillus described by Pfeiffer in 1892. The disease is, therefore, infectious. It is also a communicable disease because the organism is found in the respiratory passages and is expelled in coughing and sneezing. The infectious material thus sprayed from the mouth if inhaled by others will cause the disease. Discharges may also be found on pipe stems and mess gear used by patients, and the common use of such articles is one of the causes of the spread of the disease.

The spread is very rapid, more so, perhaps, than any other disease and under certain conditions an epidemic started in one place is soon carried by travelers from place to place until it reaches many parts of the world. It is then called pandemic. Between epidemics of the disease only occasional cases may be seen. These are known as sporadic cases because they occur without any apparent relation to another case, but it must be kept in mind that many of the so-called cases of "grip" are not really influenza at all, but diseases due to other causes. "Grip" is a favorite term to use for want of a better diagnosis when the symptoms are those of a common but severe "cold."

Pandemics of true influenza are not common. The disease usually travels from Europe to the United States.

The last great pandemic of influenza was in 1889-90. Concerning this Dr. Osler, in his classical textbook on the "Principles and Practice of Medicine," which is contained in the medical library of all naval vessels, writes as follows:

The last pandemic seems to have begun, as many others had before, in the Far East. It may have started in May, 1889, in Buchara, reaching Moscow in September, the Caucasus and St. Petersburg in October. By the middle of November Berlin was attacked. By the middle of December it was in London, and by the end of the month it had invaded New York, and was widely distributed over the entire continent. Within a year it had visited nearly all parts of the earth.

The present pandemic seems to have started in this country. It was epidemic in New York in March, and visited many cities of the United States. Then it seems to have appeared in Spain and from there spread to other parts of the Continent, including Germany.

Outbreaks in any locality are usually over in from 6 to 8 weeks, during which time 40 per cent of the population may be attacked,

and it respects neither age, sex, nor social position. The effects of diseases like influenza are ordinarily more severe in those people who are underfed, insufficiently clothed, and overworked. It would, therefore, be interesting to have the facts relating to the effect of the disease in Germany, where unquestionably food and proper clothing have been scarce, and where women and children have had to engage in manual labor, causing unusual fatigue.

Insufficient food and clothing and muscular fatigue render people more liable to contract infectious diseases when exposed to them, the conditions tending to increase susceptibility by lowering immunity.

REMOVAL OF FOREIGN BODIES FROM THE CORNEA AND CONJUNCTIVA.

By A. H. CECHA, Lieutenant (J. G.), M. C., United States Navy.

Frequently the doctor, or hospital corpsman in the absence of the doctor, is presented with patients having foreign bodies lodged in the eye which, while not always of a serious nature, often give extreme discomfort to the individual and at times are very perplexing on account of the difficulty of locating them or their removal. Often there is no foreign substance in the cornea or on the conjunctiva, and it is just as important to know and be certain of this so that the individual may be assured of this fact and thus prevented from going from one person to another to get rid of imaginary irritating matter. To be able to quickly locate and remove a foreign body means much in the way of relief to the patient and is less trying to the attendant.

Foreign bodies may be particles of steel, iron, rust, cinder, or dust. These particles differ from such objects as particles of dry fiber, leaf, or hair in that they have a tendency to work their way into the cornea. Probably the most interesting objects to remove are pieces of steel, which, flying at great speed from the lathe, are capable of burying themselves deep within the cornea and even to make their way between its layers.

If it is possible daylight should always be employed when looking for foreign bodies; for one may repeatedly examine the eye by artificial light without seeing anything, while daylight would expose the object almost at the first glance. The cornea should be first quickly examined and then the eyelids everted and examined. The inner surface of the lower eyelids can be easily exposed by pulling down the eyelid, but the conjunctiva of the upper eyelid can only be well exposed by using an applicator or match, first everting one side and then the other side of the eyelid. A magnifying glass is an aid to this work. Looking vertically at the cornea often fails to locate the object,

especially if it is of a light color and of a small size. For this reason one should always examine the cornea in a plane parallel to it; that is, by oblique illumination. If this is done not only will the object be quickly seen, but it will offer a rapid method in distinguishing a foreign body from spots on the iris, which in some eyes bear a remarkably close resemblance to foreign bodies. When iron or steel particles are not immediately removed they leave a ring of rust on the cornea, and this when not clearly defined resembles a foreign substance, so that one would be unsuccessful if he tried to remove it, for it consists chiefly of a stain which will gradually disappear by absorption; any attempt at removal would only lacerate the cornea and so increase and prolong the pain.

Some particles of steel are forced beneath the first layer of the cornea, in which case they appear as if on the surface. If such a particle were to be removed directly through the cornea it would produce needless laceration. It is best, when a particle is difficult to remove, to consider such a possibility as this. If such is the case, look for the edges of the perforated layer of the cornea, and when found it is a comparatively easy matter to withdraw the foreign body.

Sometimes after the foreign particle has been removed the patient still insists that he feels the object in his eye, but a close examination reveals nothing. This is due to the fact that the conjunctiva of the eyelid or the cornea has been lacerated by the particle and the movement of the eyelid over the cornea gives a sensation similar to that of a foreign body. This feeling usually disappears after a few hours' time, and with proper treatment the conjunctiva heals within two or three days. Again a patient may have had a particle embedded in the cornea which had remained there for 24 hours, but by the time he comes to have it removed it has worked its way out, and with the aid of the lacrimal secretion it has been carried away; as a result the depression caused by the object continues to give pain just as if the foreign substance still remained lodged in the cornea; this is because the ends of the ciliary nerve are exposed and coming in contact with the air and lacrimal secretion are being irritated. This is a case which must not be dismissed until proper medical treatment has been administered.

While ulcers are very frequent occurrences due either to the deep lodgment of the particle in the cornea or to the attempt at their removal, infections and resulting scars are seldom the result of ordinary foreign substances, provided proper care and precaution were taken in manipulating.

A blunt spud is all that is required to remove a superficial foreign body, but one lodged deeply can only be removed by a foreign body gouge.

It is hardly necessary to say that the eye must be cocainized as it facilitates the work, for it removes the pain and abolishes the reflexes. However, in cases where the particle is simply adherent to the surface of the cornea or is located on the conjunctiva of the eyelids this measure should be dispensed with, because with a little effort on the part of the patient the eye reflexes can be suppressed and with a piece of cotton wound on the end of an applicator and moistened with boric acid solution it can be easily removed.

The aftertreatment is important and should it be neglected will cause suffering and in many cases the patient will go to others to see whether the foreign substance still remains lodged in the eye. Even though nothing can be seen in the eye it should be treated the same as after removal of a foreign substance; in this case the discomfort and pain are due to the laceration of the conjunctiva by the foreign matter during its presence but now absent. Immediately after the removal yellow oxide of mercury ointment or argyrol ointment may be applied and later followed with frequent instillations of an eye lotion, such as equal parts of camphor water and saturated boric acid solution. Where the symptoms of irritation are severe the hospital corpsman should bandage the eye, as this will protect the eye and remove the symptoms in a short time; where the eye is markedly inflamed he should put the man to bed and apply hot compresses to the eye.

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ADVICE TO HOSPITAL CORPSMEN.

SUPPLY TABLE OF THE MEDICAL DEPARTMENT.

The Supply Table is the catalogue of all the articles used by the Medical Department of the Navy which are furnished by the medical supply depots. It is the hospital corpsman's guide as far as pertains to medical and surgical supplies and equipment and the methods of obtaining them. Every hospital, ship, and station where a medical officer or hospital corpsman is stationed should have one of the 1918 editions. (Obtainable from the supply depot on Form "O.") This blue pamphlet contains a mine of information and will repay very careful study. It tells you the amount of supplies allowed for any size complement; it describes these supplies, tells you how to order and obtain them, tells which are the poisonous drugs, and which are expendable and which nonexpendable. A requisition for supplies should never be prepared without consulting the Supply Table. Endless confusion, serious delays, and errors would be avoided if the instructions contained in the Supply Table were carefully followed. (Ed.)

REVISION OF THE SUPPLY TABLE OF THE MEDICAL DEPARTMENT, 1918.

By O. G. RUGE, Lieutenant, M. C. (T), United States Navy, and C. E. SCHAFER, Lieutenant (J. G.); M. C. (T), United States Navy.

The revision of the Supply Table of the Medical Department has, in the past, been a matter largely of making additions of such articles as may have been recommended or found desirable since a previous revision and of eliminating such of the articles as were found unnecessary or undesirable.

In the present 1918 revision of the Supply Table just issued endeavor has been made for the first time to not only make the same more complete and satisfactory in so far as additions and deletions are concerned, but to provide:

(a) For the more expeditious reception of supplies by waiving the bureau's approval of supply depot requisitions when the same are *within stipulated allowances*; all requisitions within the allowance being forwarded direct from the ship or station to the depot. (See pp. 3 and 13, S. T.)

(b) For the more satisfactory preparation of requisitions by incorporating a complete set of explanatory notes for reference purposes. (See pp. 8-11, S. T.) Also by having all supply depot requisition forms of the standard typewriter size, namely, 8 by 10½ inches, loose leaf, so that they may be prepared on the typewriter.

(c) For the intelligent replenishment, by means of requisitions, of all the standard cases, boxes, pouches, etc., listed on the Supply Table, the separate articles to be carried in the depots ready for immediate issue.

(d) Instant recognition of the drugs that bear a poison label by having the same printed in black-face type.

(e) A ready reference to any article included within the Supply Table by including a comprehensive index, with cross indexes in many instances. (See pp. 91 to 164, S. T.)

The revised Supply Table has been divided into four parts, viz: Part 1, "Standard equipment"; Part 2, "Dental equipment"; Part 3, "Contents in detail of cases, etc."; Part 4, "Index." The 78 numbered explanatory notes are given on pages 8 to 11 and appear but once, corresponding numbers being used throughout the Supply Table when needed for reference purposes.

Wherever deemed advisable the description of the article has been made more definite, to allow those preparing requisitions to state more precisely what is desired, as, for example, needles for hypodermic and intramuscular syringes, in connection with which the length and gauge of each needle is specified. All of the syringes for subcutaneous injection have been standardized, and all needles for these syringes have been made interchangeable. An all-metal syringe case for holding intramuscular all-glass syringes and needles has been added. This case is intended primarily as a suitable container for a ready assortment of intramuscular syringes and needles included in the Supply Table. This case is not expendable. The syringes and needles are separately listed and are issued as separate expendable items.

The several separate instrument cases heretofore listed on the Supply Table have been eliminated and in place thereof the bureau has included a "chest, surgical instrument," issue of which is intended to vessels without operating rooms and to the larger stations. An electric genito-urinary examining case is also included in the supply table for separate issue. The genito-urinary instruments were placed in a separate case because it was found that they were frequently damaged when packed in a case with other instruments. Issue of three separate surgical-instrument outfits is now provided for, viz, a "cabinet, surgical instrument," for ships having operating rooms; a "chest, surgical instrument," for the larger ships without an operating room and for the larger shore stations; a "surgical roll," for issue to small ships and stations.

Quite a few additions have been made in the several classes, but consideration was given only such articles for which there was the persistent demand by medical officers, and which, after investigation, were found suitable and desirable for use on board ship and at shore stations. Among the more important additions and eliminations the following may be mentioned:

MEDICAL SUPPLIES.

Additions:

- Acetanilid.
- Acid phenyleinchoninicum (Atophan).
- Procaine (Novocaine equivalent).
- Arsphenamine (Salvarsan equivalent).
- Compound spirit of orange.
- Chlorine-antiseptic compound (for preparing Dakin's antiseptic).
- Tincture iron-citro chloride (for preparing National Formulary elixir iron, quinine; and strychnine).
- Emetine hypodermic tablets.
- Liquor hypophysis.
- Paraffin-wax compound (for treatment of burns).
- Fluid extract of wild cherry.
- Quinine hydrochloride (for preparing National Formulary elixir iron, quinine, and strychnine).
- Rectified oil of tar.
- Sodium chloride, c. p.
- Potassium-mercuric iodide tablets (a disinfectant without action on instruments, efficient in very dilute solutions).
- Terpin hydrate.
- Barium dioxide (for barium-formaldehyde method of disinfection).
- Barbital tablets (veronal equivalent).

Eliminations:

- Betaeucaine.
- Black mustard.
- Aconite tablets.
- Nitroglycerine tablets.
- Morphine sulphate tablets.
- Strychnine sulphate tablets.
- Terpin hydrate tablets.

SURGICAL INSTRUMENTS AND APPLIANCES.

The several separate and distinct surgical instrument cases heretofore listed on the Supply Table have been eliminated, and here-

after the surgical instrument outfit of a ship or station will consist of either—

- (a) One surgical instrument cabinet (only issued to ships with operating room; not issued to shore stations).
- (b) One surgical instrument chest (for ships without operating room and shore stations with considerable complements).
- (c) One surgical instrument roll (for small ships and stations).

A genito-urinary examining case (electric) has also been added, to be issued separately.

A metal case for holding a ready working outfit of glass intramuscular syringes with a complete assortment of needles has been added.

A convenient injection outfit for arsenical preparations of the salvarsan type has been added.

Taper point needles for intestinal work, Politzer bags, tongue-holding forceps, and mouth gag have been added.

SURGICAL DRESSINGS.

Additions:

Washable elastic-cotton bandages.

Gauze in 100 yard rolls for issue to hospitals.

Lint.

Impervious paper for wet dressings, issued with a view of reducing the need for oiled muslin. Rubber tissue heretofore issued as a wet dressing material has been eliminated.

DISPENSARY AND LABORATORY EQUIPMENT.

Additions:

Beakers.

Evaporating dishes.

Graduated measures.

Funnels.

Ointment-shelf jars.

Test-tube brushes.

Test-tube racks.

Seidlitz-powder measure.

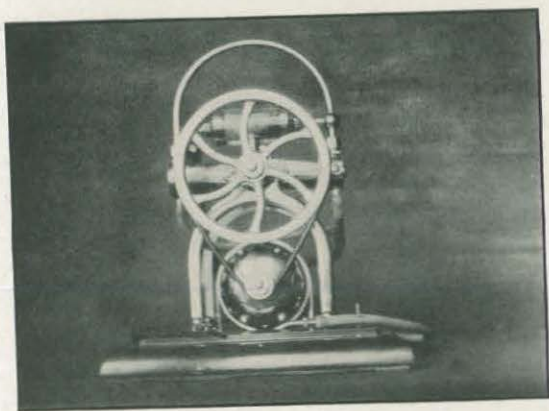
Rubber tubing for Dakin's apparatus.

Eliminations:

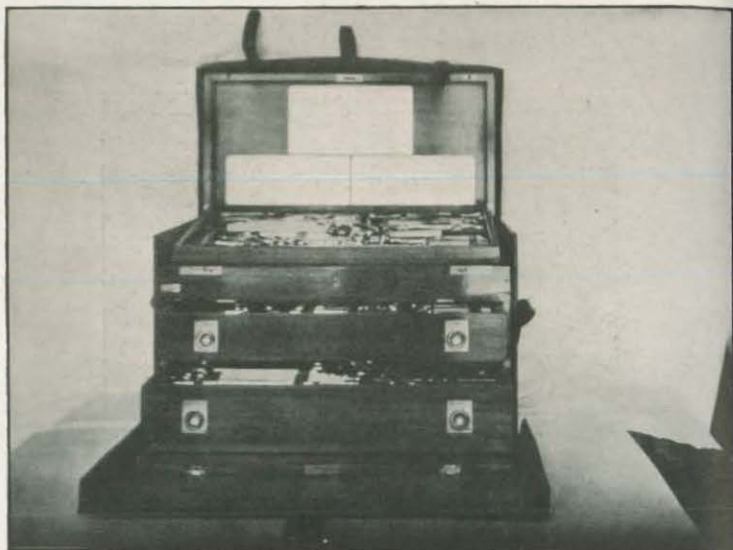
Irrigating bottles with fittings.



New atomizer for paraffin wax.



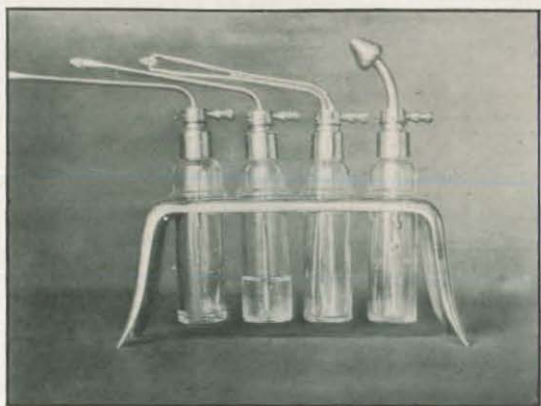
Air compressor (electric) for spray-tube atomizer.



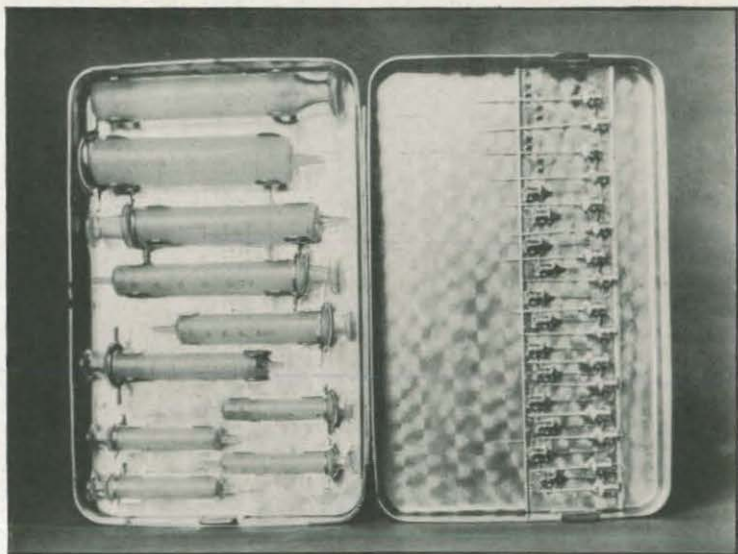
Surgical instrument chest (new) for ships. Navy standard.



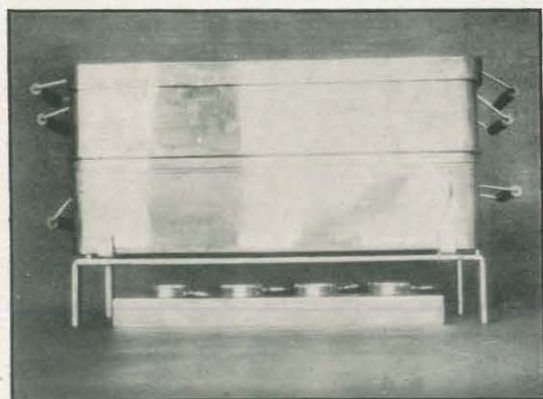
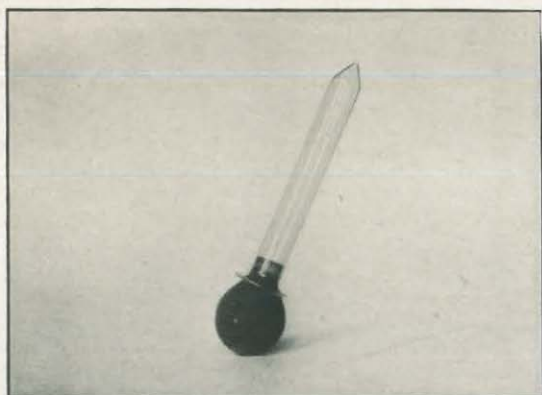
Surgical instrument chest (new) for ships. Navy standard.



New atomizer; special spray-tube type.



New hypodermic set. Navy standard.



New Navy sterilizer.

HOSPITAL AND NURSING APPLIANCES.

Additions:

Atomizer for paraffin-wax compound.

Atomizer, special, spray-tube type.

Air compressor, electric, without tank; the connection tip on compressed air tube fits all atomizers and powder blowers issued.

Material for making multiple tube apparatus for use in the Carrel-Dakin method of wound sterilization.

Hone.

Restraint apparatus.

P. syringes, pipette form, readily sterilized.

BEDDING AND LINEN.

Addition:

Crash toweling.

BOOKS.

Additions:

Diseases of the skin.

Food inspection and analysis.

Handy book for the Hospital Corps, United States Navy.

National Formulary.

Chemistry.

Elimination:

Handbook for the Hospital Corps, Mason.

Both the standard and the portable dental equipment are listed in the revised Supply Table and many additions to these outfits have been included. These dental outfits are issued as required, namely, the standard outfit to such places as are permanent in character and where electricity is available; the portable dental outfit being provided for such stations more or less temporary in character and where electricity is not available.

While the bureau waives approval of requisitions in the future, it is to be understood that supply depots must in filling requisitions use judgment and may at times find it necessary to make modifications or eliminations for reasons which must be obvious.

It is believed that with the many additions and changes made in the revised Supply Table, there will be very few occasions for a ship or station to submit a requisition for medical supplies for purchase in the open market.

With a view to making future additions of the Supply Table as complete and satisfactory as possible, it is desired that criticisms of the present Supply Table, as well as recommendation for additions and eliminations, be submitted from time to time for consideration in connection with future revision.

NOTES ON STATISTICAL REPORTS.

By JAMES HOLDEN, Lieutenant (J. G.), M. C. (T), United States Navy.

Considerable difficulty is experienced in the bureau through lack of care in the preparation of statistical reports and failure of hospital corpsmen to thoroughly familiarize themselves with existing instructions, errors and omissions occurring so frequently as to seriously hamper the work of the statistical section and necessitate greatly increased correspondence and delay in adjusting discrepancies and making corrections. Inasmuch as the clerical duties of the Medical Department devolve mostly upon the personnel of the Hospital Corps, it is incumbent upon all hospital corpsmen to become thoroughly familiar with statistical reports, instructions relative to their preparation, and to carefully follow these instructions to the letter as well as in the spirit, thereby increasing the general efficiency of the corps and avoiding the humiliating experience of having these reports returned through official channels for correction.

Every hospital corpsman should study and familiarize himself with the following instructions pertaining to statistical reports:

(1) Manual for the Medical Department, 1917, chapter 13, sections 3, 4, 5, 6, 7, 9, and 14.

(2) General instructions for blank forms (personnel) pamphlet Nomenclature of Diseases and Injuries, United States Navy, of December 1, 1917.

(3) Printed instructions on Forms F and K, reverse side of Form F cards, and on Forms P and X.

(4) Bureau's circular letters Nos. 125135-0:1, 125802, 127465-2, 127465-3, and 127644 (these letters, if not in your files, will be furnished on letter of request).

Attention is specifically invited to the following:

Form F cards.—Frequent errors and omissions occur in Form F cards through failure to comply with instructions for numbered lines on reverse side of the card. All data called for on this report is essential, and care should be taken to enter Christian names in full, correct date of birth (most common error on Form F cards), diagnosis strictly in accordance with the terms of the Navy Nomenclature, key letter for all injuries and poisons, and specialty letter as provided for under article 2355, Manual for the Medical Department, 1917; the diagnosis number called for on the new card is the number which precedes the diagnosis in the pamphlet Nomenclature of Diseases and Injuries, e. g. 497, malaria, and does not refer to the class or international number as noted in the Manual for the Medical Department. The entry on line 10 must clearly indicate the ship or station from which the card is forwarded and which will account for the case on Forms F and K; i. e., *U. S. S. Cheyenne*

(K6); third naval district (section base No. 3); fifth naval district (S. P. 476); *U. S. S. Salem* (S. C. 43).

Forms F and K.—These reports are to be prepared and forwarded monthly and should include only cases which have actually been disposed of from the first to the last day of the month, inclusive, i. e., the date of disposition only indicates the month in which the case should be returned. Cases should not be reported as "Continued to next month." Cases are "*Continued to next year*" only, and Forms F and K for the month of December should include all cases remaining on the sick list at the end of the calendar year. Under Summary of Disabilities on Form K the total number of cases "taken up as" must agree with the total number under "Disposition," and this number should agree with the total number of cases reported on Form F for the same month. The data required on the back of Form K in the case of hospital corpsmen should not be omitted.

Diagnosis undetermined.—No *primary admission* under this title should be disposed of other than by transfer unless "Continued to next year," or "Ran" prior to a diagnosis being established in the case. "Under no circumstances shall a case of diagnosis undetermined be disposed of as to duty, died, invalided from service, hospital for insane, hospital for tuberculosis, or to sick leave." No case should be taken up as a *primary admission* under the title "diagnosis undetermined" and *discharged for change of diagnosis if the patient is retained on board the ship or station to which attached*. The diagnosis in this case should be left open until established whereupon the necessary entries should be made to complete the records in the case. Cases *re-admitted from some other place* under this title should be discharged for change of diagnosis as soon as the diagnosis is established and the proper entries made on the reverse side of original Form F card before forwarding to the bureau (par. 6, bureau's circular letter No. 127465-3).

Supernumeraries.—Retired officers and men (active duty or otherwise), nurse corps (female), officers and men of foreign countries, United States Army personnel and civilians should be recorded under this classification.

All classes of reserves, including personnel of the Naval Auxiliary, Coast Guard and Light House Service are to be recorded in all respects as officers and men of the active list of the Navy and Marine Corps.

Patients transferred to other than naval hospitals.—Should be recorded in all respects as though they were retained on the station or ship from which sent, unless the service record of the man is transferred or the officer detached. (Art. 2284, Manual for the Medical Department, 1917.)

Form P.—No data required under numbered columns on this report should be omitted, and only nomenclature terms should be used in column 2, amplified by stating location or site when not specifically indicated by the nomenclature title.

Form X.—Should be prepared and forwarded in accordance with instructions on the reverse side of the form. Rejections should not be entered under "All other causes" which can properly be classified under "Principal cause of rejection"; e. g., "Curvature of spine, missing members," etc., should be entered under "Deformities," etc. Only rejections for physical disability should be reported under "Rejected by medical officer." Rejections for service conditions such as "Alien, illiterate, failed to enlist, under age," etc., should not be reported under "All other causes."

No. 125135-0

AUGUST 28, 1917.

To: Commanding Officer, U. S. S. ———

Subject: Instructions for recording Army personnel (officers and enlisted men), admitted to the sick list on naval transports.

1. In all cases of United States Army personnel admitted to the sick list on naval transports, the medical officer shall prepare the following reports:

(A) Form F card (Navy).

(B) Form 52, Medical Department, United States Army.

2. As soon as a case is discharged to duty, or otherwise disposed of, completed Form F card (original), and Form 52, Medical Department, United States Army, shall be forwarded immediately to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

3. The Form F card (duplicate) shall be retained in the files, and at the end of the quarter all Army personnel disposed of during the quarter shall be returned on Form F as supernumeraries. These cases shall not be included in Form K.

4. A supply of Form 52, Medical Department, United States Army, is being forwarded under separate cover.

W. C. BRAISTED.

No. 125802

NOVEMBER 27, 1917.

To: All Medical Officers and Hospital Corpsmen. (Via official channels.)

Subject: Abstract of Patients (Form F) and Statistical Report (Form K), to be forwarded monthly.

1. In accordance with the approval of the Secretary of the Navy all instructions relative to the quarterly preparation of Forms F and K shall be changed to provide for the monthly preparation and forwarding of these returns.

2. For the month of January, 1918, and for each succeeding month thereafter Forms F and K shall be prepared monthly and promptly forwarded to the Bureau of Medicine and Surgery, Navy Department, and shall include all cases disposed of (that is, to duty or otherwise) from the first to the last day of the month, inclusive.

3. Forms F and K for the month of December shall include all cases remaining on the sick list at the end of the year. Form F cards for remaining cases shall be closed, the "Disposition" being indicated by a ———, the proper

number of sick days assigned and the card forwarded to the bureau. New Form F cards shall be prepared for the ensuing year "Taken up as ———," under the date for the previous year.

4. To amplify instructions already in force, the bureau wishes to impress on all the necessity for a Form F card and entry on Forms F and K for each change of diagnosis, as well as for each case taken up for record, and great care shall be taken to see that final cards agree in diagnosis with termination of service, reports of death, and medical survey.

5. If there is no health record to which reference can be made for the completion of a Form F card, get the necessary information from the patient, if possible, to complete the card. Do not send in an incomplete Form F card to the bureau.

6. Until other provisions are made the bureau has no objection to, and suggests in connection with the nomenclature title "No disease" that the condition suspected or held under observation for, and new classes of carriers, other than are provided for in the nomenclature, be recorded, in places requiring the entry of a diagnosis, as follows: "No disease (typhoid fever)" or "No disease (meningococcus carrier)," etc.

W. C. BRAISTED.

No. 127465-2

JUNE 25, 1917.

To: Medical Officers and Hospital Corpsmen, U. S. Navy. (Via Official Channels.)

Subject: Immediate forwarding of Form F cards.

1. On and after July 1, 1917, the originals of Form F cards shall be forwarded to the Bureau of Medicine and Surgery *immediately* (cards sent daily, if necessary) upon discharge of a patient to duty, for change of diagnosis, died, invalided from service, ran or transferred; in short, as soon as any disposition has been made which will release the card. They shall be forwarded under separate cover and not with other forms or correspondence.

2. No change in the preparation of these cards is required, but particular care shall be exercised to see that all required data is filled in.

3. Line 8 must contain an entry for every patient discharged as transferred "T," and the name of the place to which transferred shall be stated or else recorded as "expiration of enlistment," "retiring board," "retired," or "sick leave." Line 9 is a continuation of line 8.

4. It is imperative that line 10 (card sent from) be filled in.

5. The "duplicate" copy of the Form F cards shall be retained and will be used to prepare the Form F sheets and Form K, which shall be prepared and forwarded as heretofore at the required stated intervals. Bear this in mind: Original copies of the Form F cards are to be forwarded immediately upon discharge to duty or other disposition. Forms F and K sheets will be prepared from the duplicate Form F cards and will be sent, unaccompanied by cards, at the regular periods as stated on the forms themselves. Duplicate Form F cards will be retained for office files.

6. Write names in full. Use none other than the terms of the nomenclature and do not forget key and specialty letters.

7. The bureau is undertaking additional work in the field of sanitation which will require the intelligent, conscientious, and hearty cooperation of medical officers and hospital corpsmen. A new division of "sanitation" has been organized to deal with all health conditions as they arise, and in order that prompt recommendations may be made to proper authorities for protection against contagious and infectious diseases, epidemic or endemic, it is very im-

portant that reports should be received without loss of time. Often, prompt action is necessary for the control of communicable diseases, and inasmuch as the Form F cards contain an important part of the data necessary for action by the bureau these cards must be forwarded at the earliest practicable moment. The high efficiency of our naval service can not be maintained unless the fleet is protected from disease.

8. Specialists from the Public Health Service have been detailed to work with the bureau in this new division. Knowledge of health conditions in civil communities will reach us promptly and a study of their relation to the health of the Navy will constitute a part of the important work of this division. With early reports from ships and other naval communities, numerous queries from legislators, executive officers, anxious friends, and relatives can be more promptly and satisfactorily answered, and special statistics, frequently called for, can be prepared without loss of time.

W. C. BRAISTED.

No. 127465-3

FEBRUARY 18, 1918.

To: All Medical Officers and Hospital Corpsmen.

Subject: Instructions Forms F and K and Form F cards, all previous instructions being obsolete.

Inclosure: (a) Form F; (b) Form K; and (c) Form F card.

1. A sample of the latest issues of the above forms are attached hereto and all instructions on these forms shall be complied with.

2. Older forms, the previous issue, may be used but the changed instructions shall be observed.

3. Form F; only change, forwarded monthly instead of quarterly.

4. Form K; forwarded monthly instead of quarterly and note new information required on the back of the form in the case of hospital corpsmen. Old forms can be ruled to meet the new requirements.

5. Form F card; changed to meet present war emergency requirements, provision being made to include a diagnosis number, and on the back shall be noted a change of diagnosis or when a diagnosis is established in cases of diagnosis undetermined (see sample card attached).

(a) Old cards may be used for diagnosis number by placing before the title, on line 5, the nomenclature number, e. g., 497 *malaria*, etc.

(b) Key and specialty letters as formerly required on old cards.

(c) Write on the back of the old *original* card what the diagnosis has been changed to and other requirements provided for on the new card.

6. The method of handling diagnosis undetermined cases reverts to the original method of handling.

(a) The case shall be originally entered as an admission on all medical department returns, the tentative diagnosis, if desired, being inclosed in brackets as "Diagnosis undetermined (measles)," the further notations being made in a similar manner as when a diagnosis is made.

(b) The returns of the place to which transferred shall take up the case as a readmission "R. A." When the diagnosis is established the case shall be discharged for change of diagnosis "C" and readmitted "R. A." with the proper diagnosis and other necessary entries made.

(c) For the average case three cards are required—

1. Ship (or other place), one card. A-T diagnosis undetermined.

2. Hospital (or other place), two cards required. RA-C diagnosis undetermined. RA-and final disposition, with the title of the diagnosis established.

(d) Diagnosis undetermined shall only be used where it is necessary to admit a case and *transfer* it to some other place and then only where, owing to insufficient time or lack of clinical apparatus, it is impracticable for the medical officer to make other than a tentative diagnosis.

(e) Under no circumstances shall a case of diagnosis undetermined be disposed of as to duty, died, invalidated from the service, hospital for the insane, hospital for tuberculosis, or to sick leave.

7. *Supernumeraries* to be reported on Form F are retired officers and men (active duty or otherwise), Nurse Corps (female), officers and men of foreign countries and of the Army and civilians.

8. All classes of reserves (NAS, NR, NNV, CG, etc.) shall be treated as of the active list of the Navy.

W. C. BRAISTED.

No. 127644

APRIL 30, 1917.

To: All Medical Officers and Hospital Corpsmen.

Subject: Recording Naval Reserve personnel (all classes) and supernumeraries.

1. Officers and enlisted personnel of the Naval Reserve (all classes) when on active duty, and National Naval Volunteers (Naval Militia) when drafted into the regular service, shall be treated in all respects, for record purposes, as officers and enlisted personnel of the active force of the Navy and shall be accounted for on all reports and returns as such. They shall be designated by placing after the grade or rate, wherever used, for Naval Reserve "NR" and for National Naval Volunteers "NNV."

2. In reporting supernumeraries indicate a retired officer or man by giving grade or rate followed by the letters "RET"; officers and men of the Naval Auxiliary Service by grade or rate followed by "NAS"; ex service personnel by the letters "EX" followed by the grade or rate previously held; members of the Nurse Corps (female) by "Nurse"; officers and men of the Coast Guard Service by the grade or rate followed by "CGS"; members of the Lighthouse Service by their titles, followed by "LHS"; members of other naval or military organizations by grade or rate followed by the nationality or other indication; and civilians by "Civil."

3. The term "Super" for supernumeraries generally, has not been very satisfactory to the bureau for reference purposes and by close adherence to the above or definite designations, the bureau will be in possession of better information in dealing with these cases.

NOTE.—For the duration of the war, officers and enlisted personnel of the Naval Auxiliary, Coast Guard, and Lighthouse Services are to be recorded in all respects as officers and men of the active list of the Navy, inasmuch as these services come under the cognizance of the Secretary of the Navy in time of war or national emergency.

W. C. BRAISTED.

THE VALUE OF FORM F CARD AND FORM I IN COMPILING STATISTICS.

By J. T. CASSADY, Pharmacist, United States Navy.

At the present time with the rapidly increasing personnel of our Navy the Form F card is the direct means of acquainting the bureau with "up-to-the-minute information" of the conditions of sanitation, ashore and afloat, throughout the entire service, and too much

stress can not be laid upon the accurate preparation and expeditious forwarding of this card.

The hospital corpsman who is charged with the duty of filling in the data on Form F card, should read carefully the instructions on the back of the (F card) duplicate, and assure himself that he has a clear interpretation of the instructions.

On the reverse side of (F card) original, is a note relative to data requested when the diagnosis is changed. When a change is made always state the reason; whether the change is made on account of one of the following causes: Error in diagnosis, diagnosis undetermined, sequela, complication, intercurrent disease or injury, recurrent disease or injury.

This information is important, in that it enables the bureau to trace the case and prevent errors from creeping into statistics. The morbidity reports of the entire naval service are tabulated, classified, and published from the information submitted on these cards.

Give each card the "once over" before forwarding it, and assure yourself that it is absolutely correct in every detail.

Upon the receipt of Form F card in the bureau it is checked for errors and omissions under the direction of the chief statistician and transferred immediately to the Sanitation Division, where the diagnosis is recorded, tabulated, and prepared for publication in the weekly bulletin of that division.

Should the diagnosis on the card be that of a communicable disease, the respective chart representing the ship, station, hospital, or training camp from which the card was forwarded duly receives a particular colored glass-headed pin. A colored ink tracing, known as a graphic, and a colored penciled block to indicate the number of cases of that particular disease, whatever it may happen to be, are prepared, the different colors thus presenting a tabulated picture of existing communicable diseases in a manner which is available for instant reference, and one which is more readily grasped for making comparisons than is afforded by the ordinary use of flat figures alone.

The graphic records are divided into colored pin charts, spot maps, colored ink tracings, and colored block charts, which cover the walls of two large rooms. These graphic charts enable the sanitation officers to keep the morbidity conditions of the whole Navy constantly before the eyes of the bureau. The number of cases of communicable diseases are posted daily, and the rates per 1,000 are given week by week. The colors of the pins displayed on the spotting boards, designating each and every case of communicable disease reported are: Yellow, for cerebro-spinal fever; dark blue, for measles; green, for mumps; red, for scarlet fever; purple, for diphtheria; black, for smallpox; gray, for pneumonia; light

blue, for malaria; brown, for typhoid fever; white, for German measles; pink, for poliomyelitis.

In addition to the above-mentioned charts, there is a large map of the United States for spotting all communicable diseases throughout the country, including extra-cantonment zones, reported to the Bureau of the United States Public Health Service or directly to the Bureau of Medicine and Surgery by the various States, thus affording the Sanitation Division in the bureau another means of tracing the source of infection. The immediate cooperation of the bureau is exemplified in dispatching mobile laboratory units, suggesting methods for early detection of new cases, their isolation, and the final stamping out of the infection, in order that all training camps and training stations at this time may continue their vigorous course of instruction and training activities without being hampered by any unnecessary quarantine restrictions that would tend to isolate them as a unit.

The Form F cards having served their purpose in the Sanitation Division are returned to the statistical department, where they are sorted and their data is punched on a tabulating-machine card, and these cards in turn from the punching machine are put through a Powers accounting machine at the rate of 250 cards per minute, arranged and tabulated in accordance with the Navy classification, for compiling the statistical tables presented in the annual report of the Surgeon General of the Navy.

Form I is the report of sick from naval hospitals for the week ended Saturday. All cases transferred to hospital will appear on Form I. The data submitted on this form enables the bureau to check up all cases transferred to hospitals from ships, training camps, training stations, and elsewhere. Occasionally a case transferred to the hospital, from a ship, camp, or station is reported on Form I before the Form F card is released from the ship, camp, or station which transferred the patient; hence lack of cooperation on the part of the clerical force of the medical department of the ship, camp, or station involved is evident. Should a case transferred to the hospital not appear on Form I the promptness manifested in releasing the Form F card will enable the bureau to check the error and the Sanitation Division to register the case promptly should it be a communicable disease.

The purpose of circular letter SD-125210, June 4, 1918, subject: "Change in the manner of preparing Form I—Weekly report of sick from hospitals," was to reduce the time and labor of preparing this report so that the posting could be made daily; thus when Sunday arrives all that is necessary to complete the form is to type in all admissions, discharges, and changes of diagnosis occurring Saturday, fill in the columns at the head of the first page, have it signed, and

release the form immediately, so that it may reach the bureau at the very earliest time possible.

The submitting of a form or a report that is neatly and properly executed reflects the ability of the hospital corpsman responsible for its execution to comprehend and carry out instructions.

WASTE OF SURGICAL DRESSINGS.

By H. RYDEEN, Pharmacist (T), United States Navy.

It is really appalling to see how much dressing material can be wasted by a young and untrained, or an old indifferent member of the Hospital Corps. This waste occurs mainly on ships and smaller shore stations, where the supervision necessarily is not as strict as it would be in a hospital.

How waste occurs.—1. When redressing a patient everything belonging to the old dressing is thrown away, regardless of the fact that the bandage might be of muslin and otherwise as good as new, and that several gauze pads have not even been soiled.

2. By using a large dressing when a small protective one is indicated.

3. Using several pads of gauze or a handful of cotton for wiping, when one piece of gauze or a small pledget of cotton would be sufficient.

4. Instead of saving a part of a bandage a few more turns are taken or it is thrown in the waste basket.

5. By using dressings for general cleaning.

How to prevent.—1. A muslin bandage should always be saved, and there is no reason why a gauze bandage should not be used the same way, provided it is not too badly soiled; the same thing applies to unsoiled gauze pads. Save everything possible, launder, reroll, or repack and sterilize.

2. A man can often be seen coming out from the sick bay with a dressing applied to one of his extremities, and often he will complain that he can not do his work. An inspection will reveal that he has a joint secured, or that the bandage is too tight or too large. A double piece of gauze and two strips of adhesive plaster will not restrict the functions of joints or muscles.

3. In dressing a suppurating wound when wipes must be used, it should always be remembered that infection does exist and that any amount of wipes wasted will not make it any better.

4. Have a suitable receptacle for all pieces of bandages. If not sufficient for a dressing in one piece, two or more can be joined together in one's spare moments.

5. Using dressings for general cleaning is a crime, both as regards their intrinsic value and from the fact that someone on the battle field needs them.

6. Constant supervision and instruction.

In conclusion I will say that there is no satisfaction like the supreme one experienced when we know that we are not only doing what we must, but when we are doing everything in our power, be our station of duty on the firing line or on our own peaceful shores.

A splendid system for conserving gauze is in use at the Municipal Hospital, St. Thomas, which is briefly as follows:

Pus dressings are made up and kept in stock in four sizes—10 by 10, 6 by 8, 5 by 5, and 4 by 10. From four to eight thicknesses of gauze are used and the dressings are sewed around the edges.

Upon arrival of a pus case a sufficient number of dressings are assigned to that particular case only.

When redressing one of these cases the used dressing is simply put to soak over night in some disinfectant, boiled, washed, and dried the following morning and can be ready for use in the afternoon.

These dressings can be used as long as they last. They must, of course, be sterilized before assigning them to a new case.

The absorbent qualities are increased by the boiling and washing.

It is necessary to have some distinguishing mark on the individual dressings; this can be done with indelible ink or some of the aniline dyes can be used.

OFFICIAL CORRESPONDENCE.

The need for hospital corpsmen to learn clerical work can not be overemphasized. A vast amount of unnecessary work could be saved if corpsmen would conscientiously study and endeavor to follow the instructions printed on most of the Medical Department forms; the chapter on clerical duties in the Handy Book; and the chapter on correspondence in Naval Regulations and Instructions, 1913 (ch. 44, p. 541, Naval Instructions).

Corpsmen should not be advanced to the higher ratings nor can they satisfactorily perform the duties of these ratings until they are thoroughly proficient in clerical duties.

Even a Filippino boy applying for a position as attendant in one of our naval hospitals realized the importance of submitting his application in official form, duly indorsed, as shown by the accompanying letter contributed by Chief Pharmacist's Mate J. N. Lawrence, U. S. Navy.

It might also be added that many letters written by hospital corpsmen fail to show the effort to follow official procedure exhibited by this boy.

1069 HIDALGO, MANILA, P. I.,
September 11, 1917.

HEAD OFFICER,

Hospital Depy., Cavite, P. I.

DEAR SIR: I herewith enclosed this letter as an application for helper or boy of the hospital of the U. S. Navy. I am 19 years old of age, eligible for the training school for nurses. At present I am apprentice of the weather bureau of Manila, but would like to have a position in the hospital, I am,

Respectfully, yours,

DANIEL F. LABITAN.

[First indorsement.]

The HEAD OFFICER

(Through doctors of the hospital):

In case that no vacancy for the helper or boy of the hospital, I am willing to work in the U. S. Naval Hospital under your control so as to study the work of helper, but remember that if I am going to work without salary but free of food. So long I work without salary in the hospital I will stay there, and when vacancy occur in said position I may perform for it.

Yours, truly,

APPLICANT.

[Second indorsement.]

HEAD OFFICER:

Whenever my application and resolution may not approved from the U. S. Naval Hospital Department the copy for my eligible and your reply be send to me by next mail with my address.

[Third indorsement.]

To the DOCTORS AND HEAD OFFICER:

Remember that my apprentice of your hospital depends upon the assuddity of the student, but when vacancy for the position I desire may perform for it. This is all I can tell you, and hoping to receive a favorable reply on you, I am,

Respectfully, yours,

DANIEL F. LABITAN.

THE LABORATORY.

By E. A. CASE, Lieutenant, M. C., United States Navy.

WHAT SHOULD A HOSPITAL CORPSMAN LEARN ABOUT LABORATORY WORK IN ORDER TO BE MORE VALUABLE TO THE SERVICE?

The answer to this question is not quite so simple as a superficial examination might suggest and in attempting to give an answer, we will assume that the persons referred to are the average men in the corps and not those who wish to specialize in this particular branch of the hospital service.

While a very commonplace statement, it is none the less a true and important one, that success depends upon enthusiasm, patience, accuracy and precision. Without these, a man in the laboratory is useless.

One of the first lessons to master is the names and uses of the various pieces of apparatus, the use and care of the microscope and how to measure, weigh, and pipette accurately.

Urinalysis, because of its importance and comparative simplicity offers a good starting point. The various routine chemical and microscopical tests are quickly learned and are both interesting and useful in the day's work.

The examination of blood for its percentage of hemoglobin, the coagulation time, the number of red and white corpuscles per cubic millimeter, and the differential count of the white corpuscles, falls to the duty of the assistant.

He should understand the various methods of staining sputum, pus and other exudates, smears from cultures of bacteria, blood, etc., and be able, with the assistance of a qualified person, to examine them.

In order to conduct investigations dealing with bacteria, it is necessary to grow the organisms on appropriate culture media, and these the assistant must know how to make. They are diverse in composition and require much care in preparation and where sterile blood is used, he should be able to obtain it from a sheep or rabbit without killing the animal or contaminating the blood.

The preparation of tissues for histological examination is but a small part of the work, but it falls within the corpsman's province.

While he should be able to take blood for the Wassermann test, yet the test itself is best handled by an experience worker.

The making of satisfactory cultures from the throat or other situations, the injection of animals with material for examination, such as the sputum in pneumonia, the transplanting of cultures without contaminating them and the examination of feces for occult blood, parasites and ova, are not too advanced for an intelligent man to do and do well.

Such work as water analysis, the study of blood cultures, and other bacteriological problems, chemical and post-mortem studies, all require special preparation and are not rightly included in the corpsman's work, though it would not be amiss to add that a man's usefulness will depend upon his intelligence and industry.

Like other branches of the hospital work, there are duties more or less irksome, such as cleaning glassware, but it is all "part of the game" and is necessary for the maintenance of a cleanly and efficient laboratory.

The hospital corpsman detailed to the laboratory will find much to interest him and the work itself will tend to develop his powers of observation and to help him to be precise in thinking and acting.

THE NEED OF DENTAL PROPHYLAXIS.

By C. T. LYNES, Lieutenant (J. G.), D. C., United States Navy.

During the last half century greater progress has been made in preventive medicine than in any other branch of medical science. The contributions of Carrel, Miller, Black, Pasteur, etc., have been enormous, and the application of newly advanced principles has readjusted modes of living throughout the civilized world. Bacteriology has been born, and is an integral part of a normal existence. So, too, through the exigencies and demands of the present war, steps heretofore undreamed of have been made.

The real secret of good living is to keep whole that which is whole, and to repair the imperfect. To be thoroughly efficient and in good working order the parts of a machine, whether human or mechanical, must synchronise, must work smoothly together. By cleaning an engine we increase its efficiency over its previous condition—and we lengthen the life of the machine. An ounce of prevention is worth many pounds of cure. This is an application of the principle of prophylaxis, as is street cleaning, rug beating, bathing, etc., And so, likewise, is the proper cleaning of teeth and mouth a use of the same principle.

A principle, in order to become a constructive agent, must be continuously applied, otherwise it collides with and suffers from external conditions that have a temporary, and finally a permanent, disaffection on the theory evolved. And a theory must be active to become of use as a principle.

An exhaustive study of the elements to be combated in the field of preventive dentistry would be out of place in this article; so, too, would a discussion of the conditions that produce an imperfect condition of the mouth. I can not dilate on acidity, or the effects of sugar, starch, etc., upon the teeth and tissues. Instead, for a few moments, I want to examine the conditions that may be avoided through the application of a single principle—that is, the prophylaxis of the mouth as applied to the efficiency and comfort of the enlisted men.

An expression of the last four months' work will probably enlighten one as to the reason for the abnormal and unhealthy condition of the teeth.

An average of 15 men a day show that:

90 per cent need work that involves the devitalization of the nerve or the treatment of a putrescent nerve.

75 per cent are in need of extensive cleaning and scraping of the teeth.

50 per cent have numerous small cavities.

50 per cent have compound cavities.

5 per cent have never visited the dentist.

75 per cent have been in the habit of using the toothbrush but once or twice a week.

95 per cent have never sterilized a toothbrush.

And I have seen several cases where the toothbrush, having been lost, has never been replaced.

Teeth if kept clean can not decay (I intentionally disregard the natural wearing out of parts, to which all things in the world are subject). Theoretically if this principle were applied in the daily attention to the teeth, and rigidly adhered to, no cavities could occur. But there are thousands of men with imperfect teeth who know that they are imperfect and make no pretense of having them reconstructed and there are thousands more to whom a sanitary condition of the mouth means absolutely nothing. And while the absolute prevention of cavities in the teeth of the enlisted man, is next to impossible, the number of cases in which large cavities present themselves could be enormously decreased, the health of the men greatly improved, and the minute cavities greatly decreased by the application of this theory.

The food of civilian life differs radically from the food of the Army and Navy. When a man enters the service he begins to consume nutritious, wholesome food that builds up the body and strengthens the teeth, and through the lack of sweet, soft foods and the greater amount of exercise that the teeth obtain, they are less liable to decay. The decomposed food, if allowed to remain on the teeth, naturally forms an acid and the process of decay is started; if the principle of prophylaxis is not applied, this starts the trouble and the patient will not present himself for the minor cavity thus formed until pain is present, whether or not from fear of the dentist or from ignorance, I don't know, but the latter reason is more often the cause.

In my opinion, the teeth of the enlisted men as well as the officers should be given a much more thorough examination before they are passed upon as fit, and the requirements, while in the service, should be made more strict. I would advocate compulsory brushing of the teeth if I could devise an efficient method of carrying out the theory. At present, however, that is out of the question. One fact, however, remains undoubted. A chain is no stronger than its weakest link; the enlisted man, therefore, is of less value to his country if he possess poor teeth. And although it be impracticable to require compulsory cleaning at present, a great deal can be accomplished along educational lines.

Therefore, I advocate that there be introduced into the instruction for the enlisted men a series of lectures, demonstrations, and clinics

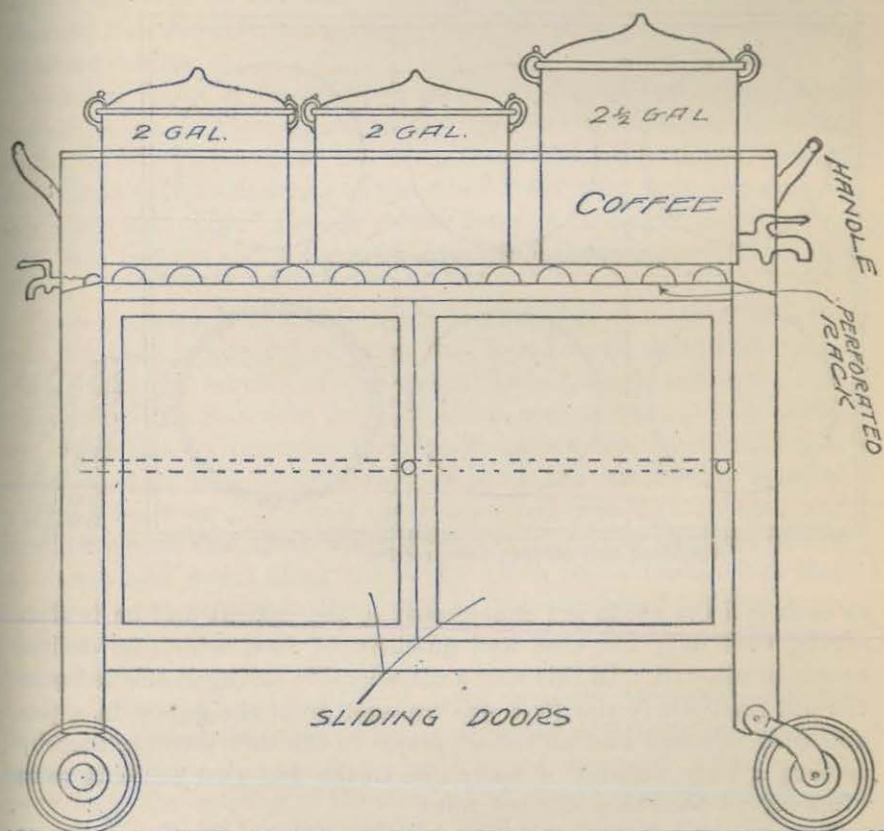
that will bring to the consciousness of each individual the absolute necessity of thorough cleanliness of the mouth and teeth. These can be given by the Medical and Dental Corps at the different training camps either directly to the men or, perhaps more practicably, through the medium of the officers' training schools. A systematic and efficiently applied course of instruction in this field would be of immense value in the increase of efficiency and would make better soldiers both mentally and physically.

PRACTICAL SUGGESTIONS.
CAFETERIA SYSTEM FOR WARDS.

"A WHEELED FOOD CARRIER."

By F. J. O'REILLY, Pharmacist (T), United States Navy.

The car is of steel construction, aluminum finish, nickel-plated fittings, rubber-tired swivel wheels, and retinned copper food con-



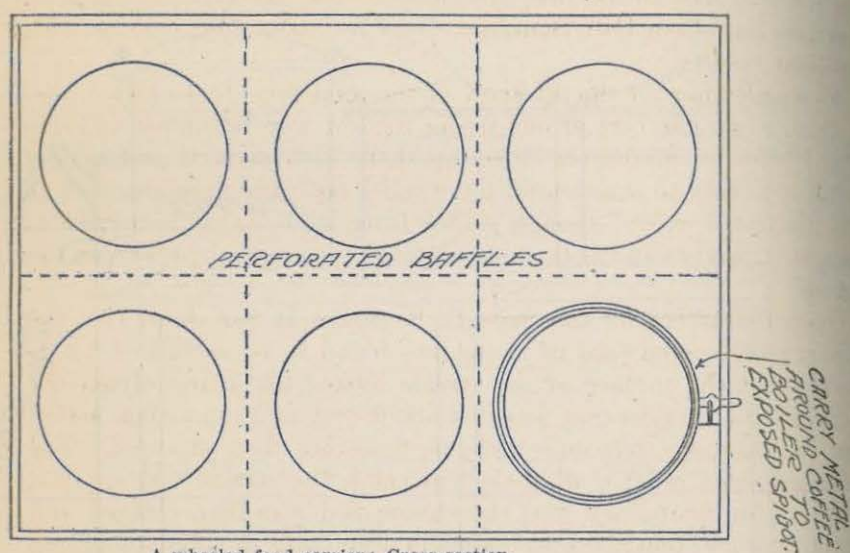
FRONT VIEW.

A wheeled food carrier: Vertical section.

tainers. The latter are surrounded by a hot-water jacket which keeps the food warm while the car is being wheeled from the galley

to the ward. The tops of the food container are made fast with clamps in order to prevent the heat escaping. This also permits the use of the car in inclement weather where there is no covered runway from the galley to the wards, such as has been constructed at our new emergency hospitals. The lower compartment is used for bread, fruit, and other foods and desserts which need not be kept hot.

Complete satisfaction will be given by the car if used properly. At mess time it is brought to the galley by the diet-kitchen man of each ward. The hot-water basin is filled to capacity with boiling water and the food containers are then filled and placed in the car. The latter is then pushed to the ward where the necessary dishes have been placed on each patient's bedside locker. As the car is stopped



A wheeled food carrier: Cross section.

at each bed the foods are enumerated to the patient and he is then served with only the kind and quantity of food which he desires or can be allowed. In this way a considerable saving is effected over the old plan where the food was brought from the galley in a pan and then reheated and served on plates in the diet kitchen, thereby causing a large amount of waste due to the fact that patients were often served food they did not want.

By using the diet car this waste is completely eliminated, as all food left over is perfectly clean and can be returned to the galley after the meal, at which time the car is thoroughly washed.

As can be seen the effect is the same as is secured by the use of the cafeteria system in the general mess halls, which system is now generally acknowledged to be the best and most efficient from every

point of view. This car can be built at a reasonable cost and there seems to be no reason why it should not be adopted for general use in all naval hospitals as another step toward the standardization of hospital equipment.

AN IMPROVISED METHOD FOR OILING SLUGGISH STREAMS CONTINUOUSLY FOR THE PREVENTION OF MOSQUITO BREEDING.

By B. E. KIRWAN, Chief Pharmacist's Mate, United States Navy.

The following is an improvised method (the drip system) for oiling sluggish streams for the prevention of mosquito breeding. This method has been in use near the camp of the Seventh Regiment of Marines, San Juan Hill, Santiago, Cuba for about four months with excellent results.

As we all know or should know of the conditions that existed here in 1898, when numbers of our troops died or were incapacitated due to the bites of mosquitoes infecting them with malaria and yellow fever, it is easy to understand me when I say "the mosquito pest at this place still exists" though yellow fever is no longer found. Malaria still persists and is the most damaging disease at present in the island.

Upon the arrival of the Seventh Regiment at San Juan Hill the stream to the windward of camp was found to be so full of "wigglers" that the surface of the stream looked black and alive. At this time the rainy season was just about over and immediate action was necessary to overcome these pests before they matured. For about one-half mile to windward of camp the stream was sprayed with oil for temporary use; the stream bed was then cleaned and straightened so that there would be no deep pools or stagnant places. All brush and weeds along the banks which had a tendency to stop the flow were removed; then well to the windward of the camp, where the stream bed had a slight decline, the following system was installed:

The stream bed was narrowed down to about 18 inches wide by damming so that the water would run rather swiftly in leaving this opening. Under this opening a half barrel was sunk with the end away from the opening in the dam a trifle lower than the other side, but on a level with the stream bed. This was done so that the water running into this well would churn up and mix or rather break up and distribute the oil dripping into it. Over this well was suspended from saplings, forming a sort of bridge across the stream, an empty gasoline can (5 gallons). A small hole was punched in the bottom of the tin and a twig sharpened on one end, with a shallow groove cut in one side, was inserted into this hole and pressed

down rather firmly. The can was then filled with crude oil and the oil allowed to drip about 30 to 40 drops per minute. If the oil dropped too slowly the sharp point of the twig extending below the bottom of the can was gently worked from side to side and as it loosened up the oil would drip faster, as desired.

The oil dropping into the water in this way would mix up well and as it went down the stream it would spread out and particles would adhere to the banks of the stream. In other places where the stream ran sluggish the oil would gradually cover the entire surface in a thin film and the part of it that was washed farther downstream was continuously replaced by more. In two days the entire stream was entirely clear of live wigglers. It is found that if 5 per cent crude carbolic or cresol is added to this oil it will also kill all matured mosquitoes alighting on the surface of the stream for the purpose of laying eggs.

AN IMPROVISED FIELD DESK.

UNITED STATES NAVAL STATION,
GUANTANAMO BAY, CUBA,
February 27, 1918.

EDITOR OF THE SUPPLEMENT,
Bureau of Medicine and Surgery,

Navy Department, Washington, D. C.:

While on expeditionary duty with the Marine Corps I find that one of the greatest inconveniences is the inadequate supply of field desks, the usual allowance being one for the Medical Department. This inconvenience may be greatly relieved by constructing an improvised field desk out of the blank form box, which will still serve its purpose as a means of transporting all blank medical forms, and in addition afford a very satisfactory desk for field use. The great desideratum is having as little as possible to transport, thus necessitating the utilization of every box to its maximum capacity.

The dimensions of the blank form box furnished by the Medical Department are 33 by 14 by 11 inches, and I find that the following plan works very satisfactorily in that it furnishes a compartment for all the blank forms, and in addition makes a very good desk. I divided the box into nine compartments. At the right end I made two equal compartments each $8\frac{1}{4}$ inches wide, and at the left end I made three compartments each $8\frac{1}{4}$ inches wide, making two of them 5 inches high and the other 4 inches high. The two boards which determined these three compartments were made to extend to the up-right that determined the two compartments at the right end; that is, to within $8\frac{1}{4}$ inches of the right end. In the middle I made four

While I did not save any of my clothing, I did save all of the health records, which was due to my having them just where I could grab them and run.

When I first started to go across, I made a box just large enough to hold all of the records, covered it with canvas, made an extra pocket for a first aid outfit, and a strap so that I could carry it over my shoulder. Then to make it handy, I hung it by the door so that I could hardly leave without seeing it.

Of course it is a little more trouble to have to take out a health record, when anyone is sick, but as a rule anyone on that kind of duty has more time than anything else.

Very respectfully,

GEORGE W. BOLES,
Chief Pharmacist's Mate, United States Navy.

THE HAITIAN GENDARMERIE.

The Island of Haiti has for some time been under the protection of the United States, and a contingent of the United States Marine Corps is maintained in that Republic to assist in maintaining order between the various native factions which for so many years have kept this island in a state of almost perpetual turmoil. The marines in their work are assisted by a group called the gendarmerie, which is recruited from the native population and officered by men selected from the noncommissioned grades of United States Marine Corps and from the Hospital Corps of the Navy. These men are called lieutenants or captains, as the case may be, and receive their commissions from the Haitian Government, with the approval of the State Department of the United States.

Members of the Hospital Corps of the Navy who in this way become officers in the Haitian Gendarmerie, administer first aid and such other medical and surgical treatment to the members of the gendarmerie as their experience and knowledge gained in the Navy entitle them to give. Often stationed at an outlying post, these medical lieutenants are frequently called upon by the native population for medical and surgical assistance, and the inhabitants of Haiti have come to respect the skill and ability of these members of the Hospital Corps of the Navy, and go to them for advice and treatment. The long training which these men have had with medical officers of the Navy makes them recognize clearly the limits of their knowledge, and when a member of the gendarmerie is suffering from an ailment beyond the skill of the medical lieutenant, he quickly obtains for his patient the services of the naval surgeon who is in charge of the medical service.

The article submitted by Chief Pharmacist's Mate Albrecht, United States Navy, will be of special interest to the hospital corpsmen who are seeking to fit themselves for duty independent of a medical officer, whether such duty be with a company of marines detached from the regiment located in a malarial jungle, with a group of native gendarmerie stationed many miles from hospitals and doctors or on board a small vessel of the Navy which spends days at sea, often very far from any other ship and from medical assistance. In reading the article of Chief Pharmacist's Mate Albrecht it must be remembered

that while these men are allowed the greatest possible freedom and while they are encouraged to take responsibility, their work is carefully supervised by the naval surgeon who has them in charge and who defines the limits of treatment allowed. When a hospital corpsman is first attached to the gendarmerie his work is limited to first aid and to routine treatment for the common ailments found in the island population. Later, as his experience and knowledge grows, he is trained more and more by the naval surgeons and given a somewhat wider field and more responsibility.

It is not the function of these men to treat the ailments of the civilian population but whenever information of native diseases, epidemics, and unhygienic conditions is brought to light, these medical lieutenants may, with tact, patience, sympathy, and an intimate knowledge of native customs and viewpoint, help lead the people to better sanitation and to reduction of prevailing disease.

DUTIES OF A MEDICAL LIEUTENANT IN THE GENDARMERIE D'HAÏTI.

By ALBERT ALBRECHT, Chief Pharmacist's Mate, United States Navy, and First Lieutenant, Medical Service, Gendarmerie D'Haïti.

Probably few men in the Hospital Corps of the United States Navy have had the experience of the independent duties of a medical lieutenant in the Gendarmerie D'Haïti. For the past 18 months I have been attached to the gendarmerie. The first three months of that time was spent in Cape Haitien where I did independent duty in every sense of the word. We had here to do the medical work for the civil prison, the gendarmerie in Cape Haitien and near-by posts.

After looking the field over and seeing disease on every side I decided to train some assistants as soon as possible; for the gendarmerie I selected an English speaking negro who learned very rapidly and was soon of great assistance. From his giant build his work as master-at-arms in the sick bay was a great help.

In the civil prison I selected a young man who spoke Spanish. He was guilty of murder. As I was hopelessly lost with French and Creole, he was a valuable find. He would get the patient's symptoms in Creole, translate for me in Spanish and I would treat them in English.

Medical work of the civil prison.—Three hundred men and about 30 women were ordinarily incarcerated here and the medical material was superabundant. Men not yet tried still wore their civilian clothes; short-term prisoners wore blue-striped uniforms and long-term prisoners wore the red stripe. With this classification of uniforms detection of malingering was many times simplified.

Sick call was from 7 to 10 a. m. During these hours we treated about 40 prisoners as a daily average. The principal diseases with which we had to contend were: Syphilis, malaria, tuberculosis, leg ulcers, and intestinal diseases. The "weather eye" was always open for epidemics, as many prisoners were continuously arriving from all parts of northern Haiti, and not without results. We had a very severe epidemic of dysentery with symptoms typical of the bacillary forms; in all there were eight cases with four deaths (50 per cent). I had no microscope and Dr. Reed kindly let me use the one in the Field Hospital there. All stools from these cases were negative for ameba. We were not equipped to do bacteriological culture work.

Tuberculosis.—The men of northern Haiti are powerful men compared with those of the south. The contrast is very marked to one doing medical work in both places, and the striking feature about T. B. in the north is that a man may be nearly dead from the disease and yet because of his massive build one will hardly suspect the disease to be in the advanced stages, when, as a matter of fact, he may only live a few days, or, at most, weeks.

Two similar cases came under my observation in the Cape. One powerfully-built man (civilian) met me in the street one morning and showed me a large butter can half full of frothy blood that he stated he had just "coughed up." He was sent to the general hospital and died four days later.

Another case, apparently healthy (gendarme), did not report for duty one morning. His wife sent word that he was ill. He had several pulmonary hemorrhages, smears were positive for T. B., and he died in three weeks.

It is, of course, an accepted fact that the negro race has practically no resistance to tuberculosis. This fact is strongly verified here in Haiti. In Port au Prince when we found a man's sputum teeming with T. B. we usually told him he had about six months to live; but from following up these cases after discharge from the gendarmerie we found they died in from three weeks to four months.

Tuberculosis "runs wild" in the island and as many of the lower-class natives are poverty stricken and have no blankets to keep them warm at night during the cool season they close all doors and windows, have practically no ventilation, with the consequence that whole families are infected.

Another factor in the spread of the disease is that many houses are so overgrown with vines and trees are so thickly planted and have such dense foliage that the rays of the sun never enter the house. The sputum-covered floors remain constant sources of infection. The

Italian adage "where the sunshine does not enter, the doctor does" is strongly verified here in Haiti.

Numerous leg ulcers were treated in the prison at the Cape and best results were had with Castellanie's protargol ointment, locally, and daily inunctions of mercurial ointment. It was thought the great majority of these ulcers were syphilitic, though no Wassermann work was done in Cape Haitien. Under this treatment many of the most loathsome ulcers were rapidly healed.

At 10 a. m. each day, after finishing the work at the prison, we made sick calls at the gendarmerie barracks. The very first morning syphilitic manifestations were seen in abundance; whole squads of gendarmes were stripped to the waist, lined up, given the proper quantity of mercurial ointment, and the order was given to "commence firing." Each man applied the ointment, by inunction to the man in front of him and the work was continued for half an hour. The gendarme assistant worked on the last man in the line. Probably a still better "line-up" would be to have them in a large circle with the hospital assistant stationed in the middle of the ring to see that motion is "perpetual" for the required length of time.

I performed my first operation here, on a bubo, and since that time, when necessary, I have operated on a number of minor cases.

One day each week we made a trip to Grande Rivière and treated the sick gendarmes there. This was an outing. The town is situated on the banks of a beautiful tropical river, which flows between majestic mountains, ever covered with a dense, wild, green, tangled jungle.

After about three months' service in Cape Haitien I was relieved from duty and Dr. Helm and his assistants took charge of the medical work of the Department of the North.

In tropical countries where skin lesions and ulcers are common and where syphilis and yaws are prevalent mercury is found of great value, even in cases that are not actually syphilitic.

Before leaving one event of special interest occurred which revealed a barbarous custom among the Haitien women. I was called one night to treat a Haitian woman who stated that another woman had bitten off her nose. In her right hand she carried her nose and in her left hand her blood-stained handkerchief. I sewed the nose back in place but it was completely devitalized, became gangrenous and had to be removed again later. I learned from other Haitians that this is a common custom among jealous women, to bite off each others noses, ears, and lips, then hurl them to the ground and grind them into the earth with the heels of their shoes.

Upon arrival in Port au Prince I was stationed in the Gendarmerie hospital. This is a small building which now has a 20-bed ward, a nice little operating room, a cozy dispensary, and a labora-

tory that is a great joy. A hospital tent is used for contagious cases. Our daily average of bed cases is 12 to 15 and we treat, on an average, about 30 other gendarmes each day.

Laboratory work.—We have been continuously adding to our laboratory equipment and can now do most any kind of clinical work. The routine work consists of urine, blood, feces, sputum, water (limited chemical and complete bacteriological), milk (complete chemical and bacteriological), examinations and complement fixation tests for syphilis are done one day each week.

We have been making autogenous vaccines and have spent considerable time searching stomach contents for poisons.

Feces.—Several hundred specimens have been examined. Of 250 stools collected from Haitians all who were ordinary hospital cases, the following percentages of intestinal parasites were found:

Ascaris	21.0	Trichiuris	23.0
Hooks	10.8	Flagellates	9.6
Strongyloides	2.4	Balantidium coli	1.6
Entamoeba histolytica	.8	Stools negative	30.0

Seventy per cent of the stools examined contained ova of some species of intestinal parasite.

Twenty-one double infections were found (usually ascaris and trichiuris).

Five triple infections were found; Trichiuris, hooks, and flagellates in two cases, and trichiuris, ascaris, and hooks in three other cases.

Technic.—Only two 1-inch cover-glass preparations were examined from each stool. If 10 had been examined, as is ordinarily done, the percentage of hookworms would probably have been considerably higher; but we did not have the time and we have had no trained assistants to do this work.

Entamoeba coli is quite common in the island and entamoeba histolytica is very rare. I have seen only two cases of the latter in Haiti, and dysentery in the gendarmerie is very seldom seen. This is a great contrast compared with the numerous cases seen in the Philippines.

We have never seen a case of typhoid in the island. Recently we had a case of pneumonia with typhoid-like stools; cultures were negative for *B. typhosus* and the stool was found teeming with flagellates which accounted for his diarrhea.

Flagellates are very common, with an occasional case showing diarrhea.

Water analysis.—The drinking water of Port au Prince is very good, though the amount in many homes is limited. In most houses

the water is turned on at certain hours during the day; average six to seven hours.

The source is large-volume springs back in the mountains. It is brought to the city by gravity, through large cement-covered pipes. These cement pipes are constantly being improved. The flow is very rapid.

The total count is usually a few hundred per mil and bacilli of the coli group are seldom found in 5-mil quantities. Protozoa (ameba and flagellates) can be constantly cultured from this water from 200-mil quantities.

The better class of Haitians all have a cement or tile swimming pool, about 6 by 14 feet with a depth of 4 to 5 feet. Bacteriological tests have been made on a number of water specimens from these swimming pools and they were found to be teeming with bacteria; the total count often reaching millions per mil and *B. coli* present in 1-mil quantities.

Deep well water has been found, as was expected, to be practically free from bacteria. Unfortunately, a large chlorine content is frequently found in well water here. Water from several wells at the gendarmerie cavalry camp showed from 50 to 1,400 parts chlorine per million, and of course this water could not be used.

Milk.—We have just recently completed our equipment to do milk work. Haitians state that before the Americans came the milk was grossly adulterated; they state milk from cows, horses, goats, and from women was all sold in the market under the name of cow's milk. Sweet potato emulsion slightly fortified with urine from cattle has been sold as milk, according to Haitian's statements.

Of the few specimens we have tested the only adulteration found was "watered milk." In a future paper we hope to give more complete data on milk adulteration in Haiti.

Drug analysis.—Some of the Haitian pharmacists when called on to fill a prescription attempt to sell us unheard-of mixtures. The label is beautifully written and that is about all we can say for the prescription. Recently one Haitian pharmacist offered us a large quantity of mercurial ointment at a very reasonable price. We made the purchase. The ointment was just a little bit off color and led us to suspect fraud. The ointment was assayed and found to contain lead sulfide with not a single globule, not an atom of mercury. I was treating a bad case of syphilitic iritis at the time and had we continued to use the ointment the patient would probably have lost his eye.

When drugs are purchased from Haitian pharmacists a good motto to follow is "Test before using," instead of "shake before using."

Poisons.—Considerable time is taken up in testing stomach contents for poisons. Sometime ago a Haitian woman was in the barracks and complained of feeling sick. They brought her to the hospital, where she had one convulsion and died. Post-mortem appearances led us to suspect an irritant poison. The stomach was acutely inflamed, more so around certain spots, and contained about an ounce of a reddish-brown fluid. Numerous tests on this fluid were all positive for arsenic.

Another case was recently supposed to have been poisoned by HCN in liquor. However, all tests on this liquor were negative for cyanides and half a pint given to a small dog and the same quantity to a rabbit produced no symptoms in these animals other than slight intoxication.

We have been asked on several occasions to search for poisons in cadavers that have been buried several months.

A poison very much feared by the Haitians and said to be often used is the "three drop poison." It is said to be obtained from a cadaver, after 48 hours, by washing the mouth of the cadaver with water. The Haitians believe that three drops of this poison produces swift and certain death.

Treatment of syphilis.—Our routine treatment for our numerous syphilitics in the gendarmerie consists of weekly injections of salicylate of mercury; dose 1 grain in 1 mil mineral oil. This is continued for a period of six weeks. We then "knock off" for one month and give them six more injections at weekly intervals. Another Wassermann is then made after one week, and if still positive the treatment is continued for another six weeks. Ordinarily, they respond rapidly to treatment.

The price of salvarsan has been prohibitive for use in the gendarmerie and has been used only in our most desperate cases.

We have given on an average 50 intramuscular injections a week for the past 11 months. The total number reaches well over 2,000.

One wishes for some kind of a mercury gun that could be fired and the charge cover an entire company of gendarmes. Or, we wish they could work in the "Pharmacie Central." The pharmacist in charge there employed a Haitian to make a large quantity of mercurial ointment in his large mortar. At the end of the second day the man was salivated to the tune of 700. He quit his job. The pharmacist employed another; at the end of his second day's work, he "spit out his teeth like stones." He never came back.

*Operations.*¹—I have had permission from the medical director of the gendarmerie to "go ahead" and do all minor work, and have

¹ Operations should never be performed by members of the Hospital Corps on independent duty unless in each case they have the authorization of a medical officer.

performed 112 operations during the past year. The following is a list of these operations:

Abscesses :		Hydrocele -----	1
Tonsillar -----	2	Ingrowing toenail -----	1
Perineal -----	3	Balanitis (two lateral incisions were made) -----	4
Knee -----	3	Circumcision -----	6
Popliteal -----	2	Compound finger fractures -----	2
Jaw -----	3	Large scalp wound (12 stitches) -----	1
Scalp -----	1	Tonsillectomy -----	1
Leg -----	7	Bursitis (elbow) -----	1
Forearm -----	2	Fibroma (excised) -----	1
Thigh -----	5	Sebaceous cyst (excised) -----	1
Axillary -----	2	Lipoma (2½ inches in diameter, forehead, excised) -----	1
Penis -----	1	Large, deep incised wound, instep -----	1
Ischio-rectal -----	1	Skull fracture -----	1
Other abscesses -----	7		
Bubo -----	51		

Five bubos were operated one morning as the patients waited in line.

For some months past we have been making regular bimonthly inspections for venereal disease among the gendarmerie companies stationed in Port au Prince. At these inspections we usually find 20 or 30 acute cases, principally gonorrhea and chancroid, and early treatment with restriction from liberty in most cases prevents bubo and consequently tends to greatly decrease our number of hospital cases.

At the time of the present writing we have only two bed cases. Our daily average some months ago, as stated above, was 12 to 15.

SYPHILIS, A HISTORICAL NOTE.

By J. S. TAYLOR, Commander, M. C., United States Navy.

There is a great deal that we do not know about the history of syphilis, which is supposed to have spread over Europe almost like an epidemic during the last years of the fifteenth century. This sudden occurrence and wide distribution of an apparently new disease coming just after the discovery of America has lead to an attempt to connect the two events as if one was caused by the other. Certain scholars claim that syphilis was prevalent among the aborigines in America at the time of the voyages of Columbus, was acquired by Spanish discoverers and adventurers and by them carried back to Europe.

When we stop to reflect that Columbus did not reach the mainland of the new continent until 1498, by which year the so-called epidemic of syphilis had spread to Germany, Poland, and far-off

Russia, we are forced by this theory to assume that the island of Dominica and other West Indian islands must have harbored the disease and been the source of the contagion. Syphilis is widely prevalent in Dominica to-day, so prevalent, indeed, that one finds it hard to believe that it is really an indigenous disease which was flourishing there for a vastly longer period than a mere trifle of 425 years. Lieutenant Commander F. X. Koltes, M. C., United States Navy, writing in the UNITED STATES NAVAL MEDICAL BULLETIN for July, 1918, says:

We have often wondered, therefore, bearing in mind the great antiquity of syphilis in this island, whether a racial immunity may not have developed in the people of Haiti. Whether or not it can be proved that the explorers of the fifteenth century were the first to see the disease, we know positively that many of the ancestors of the Haitian people of to-day had already arrived here before the year 1500, and therefore become infected. Perhaps the transmission of the disease through one race during over 400 years may have resulted in a partial immunity, manifested by the ability to resist the appearance of many of the symptoms which characterize the later stages of the disease. Whether or not an unusual degree of immunity exists, there is no doubt that syphilis has distinctly left its mark upon Haiti in having contributed to a lowering of the physical, mental, and moral standards of the inhabitants, manifested by a lack of bodily vigor, laziness, and "dopiness," inclination to sleep at all times, inability to perform tasks that require concentrated effort, stupidity, a universal tendency to thievery and beggary, lack of civic honesty, cruelty to man and animals, absurd presumptuousness, and a want of self-respect shown in their daily habits and customs. It is, of course, not contended that all of the above shortcomings are the direct result of syphilis, nor that they all or even any of them exist in all Haitians; but that the deleterious effect of its toxins has been an important factor in the moral disintegration we believe to be true. Therapeutic tests seem to bear out this supposition.

Four hundred and twenty-five years of syphilis in the comparatively unmixed blood of an insular race would undoubtedly lead to some slight modification, but if the disease were indigenous, if we could double, treble, or quadruple the period during which it had prevailed on the island, more profound alterations in the type might reasonably be expected.

However that may be, the fact is incontestible that Haiti and Santo Domingo are strongholds of syphilis and this was the part of the new world where colonization was first seriously attempted by the Old World.

As to the origin of the name for the disease we are not so ignorant. We owe the word "syphilis" to Dr. Girolamo Fracastor, an eminent scientist born at Verona in 1483, who among other things is remembered as the physician who attended Paul III at the Council of Trent and advised him to shift the scene of deliberations elsewhere because of the presence of a contagious disease in the vicinity and Paul acted on the suggestion and the council finished its session at

Bologna. Fracastor in his leisure moments wrote verses and is chiefly remembered to-day for his Latin poem about a young shepherd named Syphilis (fellow lover or sharer of love), who in the course of amatory dallies with a pretty shepherdess of his acquaintance developed certain painful and startling symptoms—in a word acquired the disease which we now call by his name.

Fracastor by this poem emphasized the idea that syphilis resulted from sexual intercourse and not from the malignant influence of certain stars in conjunction, nor from the effect of tides, floods, or incantations which were popularly regarded as possible causes.

Dr. Fracastor was considerably more than a mere scribbler of verses and a rude practitioner of medicine, servilely following what we consider the narrow teachings of the dark ages. He was a thinker. He observed natural phenomena and tried to draw conclusions from them in regard to the operation of natural laws. Thus his thoughts ranged over such a wide variety of subjects as geology, astronomy, physical geography, and physics. He appreciated the significance of fossil remains, referred to the magnetic poles of the earth, and seems to have had conceptions which distinctly foreshadowed our modern theory of infection by microorganisms. His poem, "Syphilis or the French Disease," was published in Venice in 1530, and his description of the epidemics of typhus which raged in Italy in 1505 and from 1524 to 1530 was published in 1533.

Nicholas Leoniceus, professor of medicine in Padua, was the author of a little book *On the Epidemic which the Italians call the French Disease*, published in Venice in 1497. This writer's ideas as to the way in which syphilis was acquired are not sound, but he was well acquainted with the symptoms, including these of the eye and of the joints and it is interesting to note that he thought the disease had existed in Europe in ancient times. Such an opinion expressed within five years of the discovery of America is important testimony in the controversy already referred to. Leoniceus was an author of repute and deserves a place in the hall of fame for his courage in challenging the blind adherence of his age to authority. He attacked Pliny and showed that the writings on botany of this ancient Roman were full of mistakes and he proved his contention in spite of the storm of abuse which broke over his head. He lived during the period of revival of learning and to question the wisdom of old Greece and Rome was a prime heresy.

It has long been held that syphilis made its first conspicuous appearance and almost in epidemic form as a result of the campaign of Charles VIII in Italy, which culminated in the occupation of Naples in 1495. The belief has long been current that the disease so widely prevalent in the French Army on this occasion was syphilis. We know that when the King began his retreat from

Southern Italy there was a great deal of syphilis among his troops and that the men referred to it as the "Neapolitan disease." On the other hand many of the women of Naples manifested similar symptoms and ascribed them to the "French disease." This is one of the best illustrations we have of "the pot calling the kettle black." There seems to be no room for doubt that syphilis was very prevalent on this occasion, but one eminent authority has suggested that the real epidemic was typhoid or paratyphoid fever.

The difficulty of explaining the sudden wide prominence of syphilis in 1495 perhaps accounts for the theory of an American origin for the disease. Jonathan Hutchinson, a great English authority, maintained that if syphilis had existed in Europe before 1492 it would have been mentioned in Chaucer and Boccaccio, but we are not inclined to accept arguments based on the silence of history. One of the great difficulties in unraveling this problem is due to confusion in terms, multiplicity of names, and the lack of concise, systematic descriptions in earlier times. The fact that public attention was very generally drawn to this disease at the time of the French invasion of Italy does not seem so very surprising in view of our own rather widespread agitation on this topic in connection with the present war.

Charles VIII was the first of three great French monarchs to attempt the subjugation of Italy, and his campaign, with its long overland march ending in disaster, attracted widespread attention. His successor, Louis XII, had no better luck in his venture, while Francis I gave in his person an illustration of a king being captured on the battle field, then carried off to imprisonment in an enemy's country, and finally breaking his pledged word, which he justified to himself by the use of a mental reservation, in order to regain freedom. These were all epoch-making incidents, and the prevalence of syphilis in the army naturally received a good deal of advertising. If we find little definite mention of syphilis, as such, before this time, the apparent omission may well be ascribed to confusion in nomenclature, and nomenclature is even to-day a source of trouble and a matter of controversy.

The sudden interest in the malady must be interpreted by common sense and the past can always be best understood by an examination of what happens in our own day. No one will pretend that people did not have vermiform appendixes in their insides or that cases of appendicitis were rare a hundred years ago just because physicians had not studied, named, and found a treatment for this affection. People used to have sharp attacks of "colic" and die of "colic" and "inflammation of the bowels," etc., where to-day we would say appendicitis. The same thing was true of syphilis, a complicated,

difficult, and puzzling disease, by comparison with which the study, diagnosis, and treatment of appendicitis is child's play.

As an example of the ignorance which may prevail about the most common every-day matters may be cited the case of John Hunter, the eminent English physician and investigator, to whom we owe the distinction between the Hunterian or hard chancre and the chancroid. He actually confused gonorrhea with syphilis, a mistake very hard to understand, and yet this misconception was not corrected for half a century. John Hunter was born in 1728, and the clearing up of the confusion in the matter was done by Philippe Ricord. Ricord was born in 1799, in America, of French parents, and went to Paris to study and practice. Dr. Oliver Wendell Holmes said of Ricord that he was "a sceptic as to the morality of the race in general, who would have submitted Diana to treatment with his mineral specifics and ordered a course of blue pills for the vestal virgins." Ricord was very popular as a teacher, enlivening his lectures with jokes, witty sayings, and laughable incidents about his professional experiences. He laid great stress on the difficulty of curing gonorrhea and often told his classes that whenever he was indisposed and feverish he was apt to have a certain dream. He would find himself in purgatory, surrounded by thousands of lost souls, all pointing the finger of scorn at him and saying reproachfully: "Ricord, you could not cure my gleet."

The fact that in the twelfth century mercury in the form of a salve was used for various skin eruptions, among which were certain contagious forms, and that the local use of mercury continued popular would very emphatically suggest that mercury was being employed for some type of ailment for whose relief and cure it was conspicuously useful.

Dr. Karl Sudhoff, of Leipzig, the eminent modern authority on medical history, has discovered at Copenhagen an old Italian manuscript dated 1465 and the handwriting of which is conceded by authorities to belong to the style of the first quarter of the fifteenth century. This manuscript contains two recipes, (16) "an excellent electuary for the French disease," (77) "directions for making syrups for the treatment of the French disease." The various terms employed for the diseases in which mercury was a specific point strongly to the fact that syphilis itself was being dealt with, though its widely differing manifestations had not yet been ascribed to this single malady of protean type. Among the terms common in the medical writings that antedate the discovery of America are the following: *Scabies grossa* or big itch; *variola grossa* or big poek; *grosse vérole*; *scabies mala* or malignant itch; *mal franzoso* or French disease; and *böse Blattern* or malignant pox.

Protean means "changeable in form," "assuming different shapes." The most striking thing about syphilis is its protean character. The skin eruptions which mark the disease in its early stages are entirely different from those of a later period, but we have the so-called "precocious type," wherein the kind of eruption usual in the second and third years appears in the second or third months of the disease. Again two men may acquire syphilis at the same time and from the same woman and yet the manifestations of the disease in the two cases may be so different that they would not be recognized as the same thing by any but a trained physician. When we consider the further fact that the period of incubation is not only variable but long (14 to 90 days), when we remember that several months may elapse between the appearance of the primary sore and the full-fledged development of the disease, we can understand how the venereal origin of syphilis may have remained hidden for centuries.

Now it is one thing for a malady like influenza, with its short incubation period and short duration, to spread over a large area of the earth's surface within a matter of weeks or months, and quite another thing, or at least so it seems to the writer, for a disease like syphilis to be transmitted all over Europe within four or five years.

Until very lately, though the modern physician is better informed than his predecessors of the middle ages, the general public has been densely ignorant on the subject of syphilis, its mode of spread, its origin, its period of incubation, and hence quacks, charlatans, and unscrupulous physicians have been able to abuse the confidence of the public to the profit of their own pocketbooks.

For the members of the Hospital Corps this historical note may be of passing interest, but it is really intended to have some permanent value by emphasizing certain features of syphilis. It is the protean character of the disease which has made it an obscure subject in the past, which accounts for the many uncertainties about its origin and course, and which even to-day sometimes makes its diagnosis a matter of extreme difficulty without the aid of a fully equipped laboratory and the services of a trained pathologist. The history of syphilis emphasizes the fact that no two cases are alike, that there is no inflexible rule by which symptoms appear and disappear, that they do not always come out in exact chronological order, that it is even possible for a person to acquire syphilis and transmit it to another without being aware of his affliction. Had space been available, mention might have been made of some of the famous men, kings, queens, etc., who were sufferers from this malady, for the sake of carrying home the lesson that it is no respecter of persons but attacks the rich and the poor, the powerful and the exalted and those of low degree, so that no one has a right to consider

himself safe from its ravages unless he possesses the self-control which will enable him to avoid infection from impure intercourse and unless he also has the knowledge of personal hygiene necessary to save him from accidental and non-venereal infection.

THE FIRST-AID MAN.

By L. C. SIMS, Lieutenant (J. G.), M. C. (T), United States Navy.

How many hospital corpsmen realize that with the coming of the war, a new vocation is being opened to them. The development of first-aid measures in the Navy and Army leads to the establishment of first-aid stations in industrial plants, at construction camps, and in the large munition plants of this country. Ex-hospital corpsmen often met the demand of civil life for first-aid men before the war and the need for this type of man increased until to-day it is not being completely filled and the demand has hardly begun. With the war and the consequent training of thousands of young men in first-aid and the care of the injured, a nucleus is being formed for this new vocation of first-aid man and surgeon's assistant.

With the high standard of education and years of study demanded by the medical schools of this country, the day has passed when every doctor acted as first-aid man, family physician, and even nurse, for his patients. Doctors are specializing, and the graduate in medicine is becoming more and more indisposed to attend to minor injuries, to act as assistant to another physician, to spend his time waiting for accidents in a factory or shop, after having spent a great deal of money and years of time in perfecting himself to make a diagnosis, perform a difficult operation, or treat an intricate ailment. Doctors prefer and expect, with excellent reason, to handle the type of cases for the successful diagnosis and care of which is needed an ability based on years of study and wide experience. Lives, however, can be, and often are, saved by the man on the spot at the moment of injury, if that man is a well-trained first-aid man. The Navy hospital corpsman with his four years or more of constant study and training in the trenches, with the Marines, on battleships, in munition plants, on destroyers, and in the first-aid plants of our growing industrial navy yards, has reached, or will reach, a degree of proficiency not possible to attain in any other way. Training for this new vocation does not necessarily include a knowledge of zoology, histology, embryology, nor an extensive or intimate knowledge of the many subjects pursued by the medical student in the medical school. It does include constant training in the care of the sick and injured, knowledge of first-aid care, and the alertness and discipline imparted by the Navy; knowledge of what to do and how to do it

instantly and well in an emergency with the materials at hand, if only a handkerchief, a pocketknife, or a belying pin. The first-aid man must be able to stop bleeding, ease the agony of an extensive burn, resuscitate the apparently drowned, splint a broken limb, cleanse and perhaps sew up a wound, apply a dressing, and prepare the patient for the more expert and extensive work of the surgeon or physician who has been summoned. If the first aid man is of value, by the time the surgeon arrives, he may find, not a moribund patient, but one reassured, resting comfortably, with first-aid dressings applied, infection and shock warded off, and an experienced well-trained assistant at hand ready to help him in his preparation for more extensive work, and able to anticipate or follow his every need. The medical profession will welcome the first-aid man and wonder how it ever got along without him, the industrial worker of civil life will come to expect and demand his presence in every hazardous occupation just as the bluejacket and marine now expect an efficient hospital corpsman to reach them early after injury in battle.

You, hospital corpsmen, have the greatest opportunity to-day to prepare for a valuable vocation in the Navy and one which will be in demand in civil life when the war is over. To do this, however, you must grasp every opportunity to assist the doctor, study your handy-book, obtain and read all the books you can on first aid dressings, operating room technique, nursing, anatomy, physiology, toxicology and minor surgery. Learn how to make and apply dressings, splints and bandages. The more you study, the better prepared you will be to do your part efficiently in the Navy and out of it. The nurse does not receive the same sort of training you do, and is, as a rule, not as experienced in first-aid measures. Nursing is a vocation by itself, but the hospital corpsman is expected to be as good a nurse as it is possible for a man to be. From the members of the Navy Nurse Corps, you can and must learn much or you will not be efficient. Your work in the Navy in this world war must be well done to demonstrate that the first aid man has a definite place and is an essential. You are already making a name for yourself. Much is being said of the excellent work of the Hospital Corps (see commendations on another page), and more will be said as the war goes on. Your opportunity for study and training is excellent, make the best of it, so that, at the close of the war, an honorable discharge from the Hospital Corps of the Navy, after four years or more of active service, will be recognized as a most valuable asset, a badge of honor and a certificate that the bearer is a first aid man, trained to act with calmness, decision and judgment in an emergency.

NEWS ITEMS.

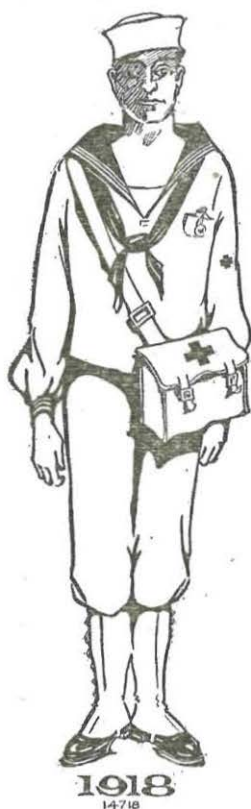
Enlistments, Hospital Corps, were discontinued early in July, although enrollments in the Naval Reserve Force were continued to meet district needs and provide a slight excess for training. The recently authorized increase in the enlisted strength of the Navy made it necessary to recruit about 3,000 hospital corpsmen in addition to the number that were taken in last year. During the months of April, May, and June the restrictions that had for nearly six months been placed on the number of first enlistments allowed for the Hospital Corps were removed, and in these three months the 3,000 men needed were quickly recruited. By the first of July it again became necessary to limit first enlistments and then stop them altogether. Hospital Corps schools were filled to overflowing when the authorized enlisted strength of the corps had been reached.

Training of hospital corpsmen of the Reserve Force is being given more and more attention in every naval district. An article with pictures on another page is an example of what is going on in many naval districts. The interest shown by the hospitals and clinics of the civilian community, as well as by the pharmaceutical schools in helping the hospital corpsman learn what he can of first-aid, nursing, and pharmacy, is right in line with the general cooperation that is being given by the people of the United States and the interest those at home are taking in the men who have entered the naval service.

Dental and medical students enrolled for inactive status for the purpose of continuing their studies have not been called to active duty this summer, because Hospital Corps training facilities were being utilized to their fullest extent for the hospital corpsmen of the active corps. A few of these students who have requested assignment to active duty in the naval districts have been allowed to work alongside of the other hospital corpsmen, and it is hoped that the practical knowledge of the Navy gained in this way will be of benefit to them.

The cruiser force training policy for hospital corpsmen which allows the best hospital corpsmen in the force to go to civilian hospitals and clinics in the city of New York during the stay of a transport in port, has recently been extended to Philadelphia and Norfolk. At Norfolk, instead of the utilization of the civilian hospital and clinic, the district has offered the use of the Pharmacist's Mates School at naval operating base, Hampton Roads, where special efforts are being made to teach hospital corpsmen Navy first aid, clerical, and pharmaceutical needs with the object of developing as rapidly as possible hospital corpsmen fitted for duty independent of medical officers.

Increase in the Size of **THE HOSPITAL CORPS** of the Navy.



1916
100

1918
3000

The Growth of the Hospital Corps Schools

The larger naval vessels have been required, once a quarter, to give up a definite ratio of hospital corpsmen in the ratings of pharmacist's mate, first and second class. These men go to receiving ships for assignment to ships fitting out and to fill complements for independent duty.

The Minneapolis School of Medicine is still carrying on its special instruction for hospital corpsmen, and the dental school there has added a course of training in dental first-aid and hygiene. A third class of 100 men will graduate about October 1.

Assistants to dental surgeons.—The few dental students who enlisted in the Hospital Corps have for the most part gone back to their schools to finish their dental studies. A few of these students have preferred to stay in the Hospital Corps, and in addition to these there are a few men in the corps who were, prior to enlistment, trained dental assistants, mechanical dentists, or men experienced in prosthetic dentistry. When these men happen to be at a station where a dental officer is working they feel that their proper field is in his office as his assistant. It is well to emphasize to these men who are either specially well fitted to help the dental surgeons, or to other men who become interested in the work of learning to be a good dentist's assistant, that advancement in rating in the Hospital Corps is given for an all-around knowledge of the duties of the Hospital Corps as laid down in the Bureau of Navigation's Annual Circular, 1918, and the Manual of the Medical Department. Special abilities along one particular line can not be rewarded by advancement in the Hospital Corps. Both dental surgeons and hospital corpsmen assigned temporarily to assist the dental surgeon will, it is thought, be interested in reading the articles in the "Supplement" which have been prepared by members of the faculty of the dental school of the University of Minnesota. One of these articles appeared in the July number and one is in this number, and others will appear from time to time. Assistants to doctors in the laboratory, in the X-ray room, in the dispensary, in the operating room, etc., will all do well to remember that it is "all-around" rather than one-sided training that brings the most sure and certain opportunity for promotion, and the men who are favored by special opportunities to gain special knowledge in some one branch should use their spare time to observe and study the other subjects which will be required of them upon examination.

The commendations published in this issue show conclusively how well the hospital corpsmen assigned to the marine forces have done their share in sustaining the reputation of their part of the Navy, and the reports which come in from ships which have been torpedoed and from ships which have rescued the crews and passengers of sunken

vessels frequently show that the hospital corpsmen at sea are living up to the best traditions of the corps and of the service. These commendations prove that the members of this corps are always ready to carry first-aid where it is needed, whether at sea or in the front-line trenches.

The regular Hospital Corps schools on July 1, 1918, had over 3,000 hospital apprentices, second class, under instruction. These schools have been purposely allowed to fill up to fullest capacity during the summer months so that plenty of men would be ready for transfer to hospitals in the autumn and early winter to meet the inevitable increase in sickness that comes with the winter months. Most excellent reports continue to come from these schools of both the type of man who is enlisted in the Hospital Corps and the way in which he is responding to the training given him. It is certain that men in these schools are being well trained, that their camps are well set up and cared for, that they are interested and enthusiastic about their work, and that those who are not temperamentally fitted for this corps are encouraged and assisted to change their rate.

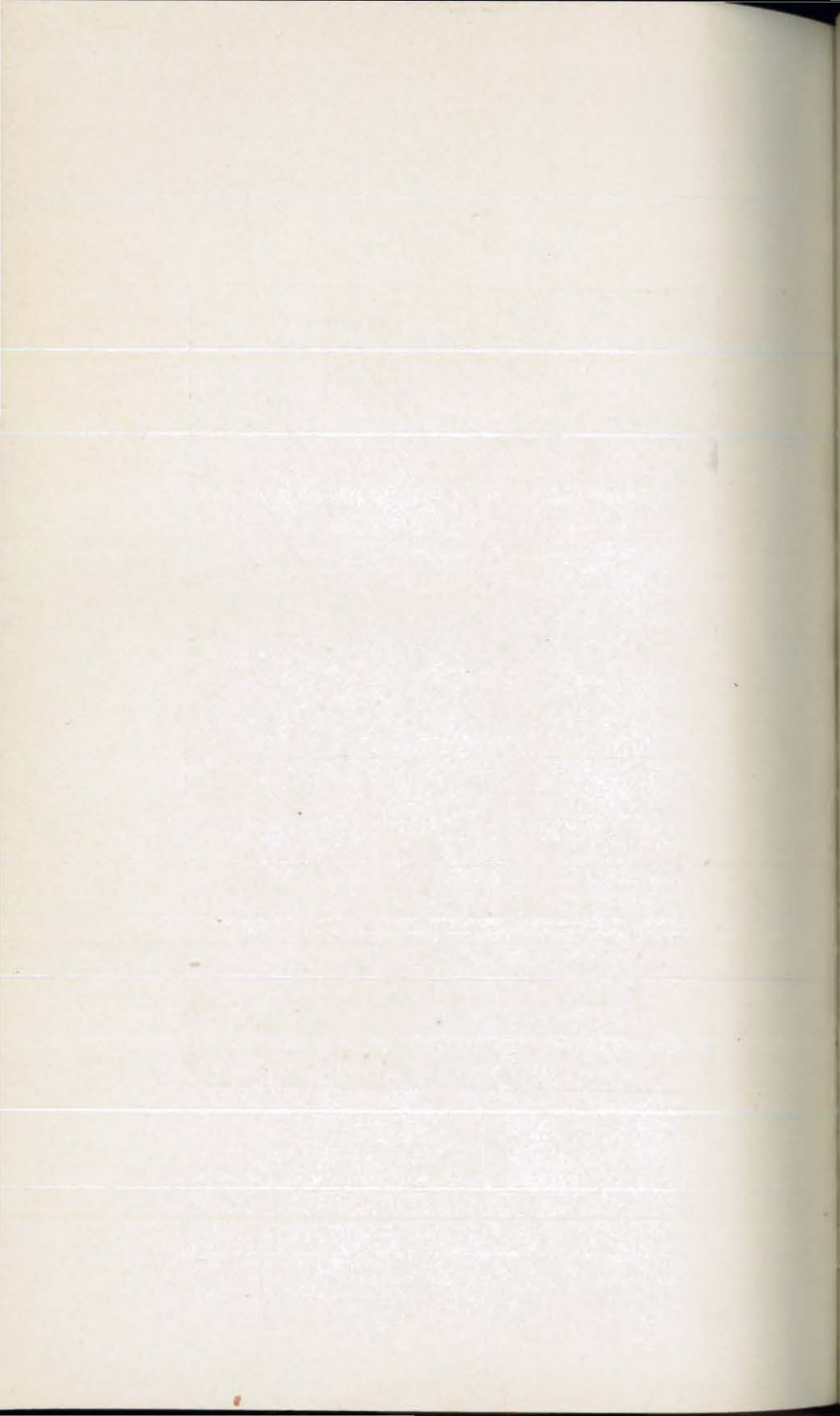
Advancement in rating is being given steadily and satisfactorily to most of the members of the corps, who must qualify before advancement.

There are many vacancies in the upper ratings for the well qualified and experienced man, as the present estimate for the next year's need for pharmacist's mates, first class, is placed at more than 1,000 in addition to those who have already been so advanced.

Art department.—At the Pharmacist's Mates' School, naval operating base, Norfolk, Va., hospital corpsmen with special abilities have been utilized for the good of the school while they are making a study of the various subjects which hospital corpsmen are required to be familiar with prior to advancement in rating. In the picture are shown a group who have ability as draftsmen. The charts of anatomical, chemical, first aid, pharmaceutical and other subjects which they prepare are for use in the class room. While the special abilities of these young men are of great value to the Hospital Corps School, advancement in rating in the Hospital Corps is not given them until they acquire that variety of experience and knowledge, both at sea and ashore, which is expected before they can qualify for advancement.



Artists at Hospital Corps School, Hampton Roads, Va.



CLIPPINGS.

WHAT IS A DEGREE BAUMÉ?

Druggists are frequently confronted with such expressions as "glucose 43 B." and aqua ammoniae 17 B. These expressions are found in market reports, formulas, and such, and as our dealings with foreign nations increase we may expect to find the use of this symbol to increase.

The following is the method of changing degrees Baumé to specific gravity: For liquids heavier than water: Subtract the degree Baumé from 145 and divide the remainder into 145. Thus, if you are buying glucose 43 B. you are buying a product that has the specific gravity of 1.421+. $43\text{ B.} = 145 \div (145 - 43) ; = 145 \div 102 = 1.421 +$.

For liquids lighter than water: Add the degree Baumé to 130 and divide the sum into 140. Thus, if you are buying aqua ammoniae 17 B., you are buying a product of the specific gravity of 0.952, which is nearly of official or 10 per cent strength. $17\text{ B.} = 140 \div (130 + 17) ; = 140 \div 147 = 0.952$. (From Jour. of Nat. Assoc. Retail Druggists, July 18, 1918).

TRANSPORTATION OF WOUNDED BY AEROPLANE.

OSPEDALE MAGGIORE, Milan, 1918, VI, No. 1.

Italy is making arrangements to use the aeroplane for the transportation of wounded soldiers. It is expected that the powerful Caproni plane can carry from 10 to 12 stretchers, and that a machine can make two trips a day between the Piave front and the city of Milan. Ten of these aeroplanes could thus transport from 200 to 240 wounded a day. It is expected that many wounded men who can only be operated on with the surgical facilities of a great hospital will thus be saved.

METHODS OF GAS WARFARE.¹

By S. J. M. AULD, British Military Mission. (Communicated by L. J. Briggs.)

All I can do in the short time available is to give you, if I can, a general idea of what gas warfare really means on the western front

¹ From American Journal of Pharmacy, April, 1918.

at the present time. Some of you may have gotten the idea that gas is just an incident, and that there is not as much attention being paid to it as there was two years ago. That idea is entirely wrong. Gas is used to a tremendous extent, and the amount that has been and is being hurled back and forth in shells and clouds is almost unbelievable. I will try to give you a general idea of what is occurring and make the lecture rather a popular than a technical description. I shall also, for obvious reasons, have to confine myself to describing what the Germans have been doing, and will say nothing about what we are doing.

Possibly the best plan would be to state more or less chronologically what occurred. I happened to be present at the first gas attack and saw the whole gas business from the beginning. The first attack was made in April, 1915. A deserter had come into the Ypres salient a week before the attack was made, and had told us the whole story. They were preparing to poison us with gas, and had cylinders installed in their trenches. No one believed him at all, and no notice was taken of it.

Then came the first gas attack, and the whole course of the war changed. That first attack, of course, was made against men who were entirely unprepared—absolutely unprotected. You have read quite as much about the actual attack and the battle as I could tell you, but the accounts are still remarkably meager. The fellows who could have told most about it didn't come back. The Germans have claimed that we had 6,000 killed and as many taken prisoners. They left a battlefield such as had never been seen before in warfare, ancient or modern, and one that has had no compeer in the whole war except on the Russian front.

What the Germans expected to accomplish by it I am not sure. Presumably they intended to win the war, and they might conceivably have won it then and there if they had foreseen the tremendous effect of the attack. It is certain that they expected no immediate retaliation, as they had provided no protection for their own men. They made a clear and unobstructed gap in the lines, which was only closed by the Canadians, who rallied on the left and advanced, in part through the gas cloud itself.

The method first used by the Germans, and retained ever since, is fairly simple, but requires great preparation beforehand. A hole is dug in the bottom of the trench close underneath the parapet and a gas cylinder is buried in the hole. It is an ordinary cylinder, like that used for oxygen or hydrogen. It is then covered first with a quilt of moss, containing potassium carbonate solution, and then with sandbags. When the attack is to be made the sandbags and protecting cover are taken off the cylinder, and each cylinder is connected with a lead pipe which is bent over the top of the parapet.

A sandbag is laid on the nozzle to prevent the back "kick" of the outrushing gas from throwing the pipe back into the trench. Our own methods are practically identical with those first used by the Germans.

The success of a cloud gas attack depends on thorough preparation beforehand. The attackers must know the country, the layout of the trenches, and the direction and velocity of the wind with certainty. Favorable conditions are limited practically to wind velocities between 12 and 4 miles an hour. A wind of more than 12 miles an hour disperses the gas cloud very rapidly. An upward current of air is the worst foe of gas. The weight of the gas is not an important factor in carrying it along, for it mixes rapidly with air to form the moving "cloud." The time occupied by a gas attack is too short to permit of much diffusion of the gas out of the original mixture.

The gas attack must be planned very carefully. If the trench line is very irregular it is likely that gas will flow into a portion of one's own trenches. The limit of safety in wind direction are thus determined by the direction of the lines of the trenches. The Germans use a 40° angle of safety; that means that on a given straight portion of the front the wind direction must lie between the two directions which make angles of 40° with the neighboring sections of the front. The most suitable type of country is where the ground slopes gently away from where the gas is being discharged. The Germans made one mistake in believing that hilly or wooded country would not do. This was refuted by the French, who made a successful gas attack in hilly and wooded country in the Vosges, as admitted in a captured German report. If the country is flat like that about Ypres, and the wind direction is right, there is very little difficulty about making an attack, especially if the enemy does not know anything about it. The element of surprise is important.

German gas attacks are made by two regiments of pioneers, with highly technical officers, including engineers, meteorologists, and chemists. They brought their first cylinders into the line without our knowing anything about it, except from the deserter's report, which was not believed. The element of surprise was greatly lessened when we began to know what to look for and to recognize the sounds incident to the preparation of a gas attack.

The first attack was made with chlorine. If a gas attack is to be made with gas clouds, the number of gases available is limited. The gas must be easily compressible, easily made in large quantities, and should be considerably heavier than air. If to this is added the necessity of its being very toxic and of low chemical reactivity, the choice is practically reduced to two gases: chlorine and phosgene. Chlorine is to gas warfare what nitric acid is to high explosives.

Pure chlorine did not satisfy quite all the requirements, as it is very active chemically and therefore easily absorbed. Many men in the first attack who had sufficient presence of mind saved themselves by burying their faces in the earth, or by stuffing their mufflers in their mouths and wrapping them around their faces.

There were several gas attacks of almost exactly the same kind early in 1915. There was no gas between the end of May, 1915, and December, 1915, and by that time adequate protection had been provided.

The first protection was primitive. It consisted largely of respirators made by women in England in response to an appeal by Kitchener. They were pads of cotton wool wrapped in muslin and soaked in solutions of sodium carbonate and thiosulphate; sometimes they were soaked only in water. A new type appeared almost every week. One simple type consisted of a pad of cotton waste wrapped up in muslin together with a separate wad of cotton waste. These were kept in boxes in the trenches, and on the word "gas" six or eight men would make a dive for the box, stuff some waste into their mouths, then fasten on the pad and stuff the waste into the space around the nose and mouth. But this got unpopular after a bit when it was discovered that the same bits of waste were not always used by the same men. During the early part of 1915 this was the only protection used.

Then came the helmet made of a flannel bag soaked in thiosulphate and carbonate, with a mica window in it. A modified form of this device with different chemicals is still used in the British Army as a reserve protection. It is put over the head and tucked into the jacket, and is fool-proof as long as well tucked down. This stood up very well against chlorine.

In 1915 we got word from our intelligence department of a striking kind. It consisted of notes of some very secret lectures given in Germany to a number of the senior officers. These lectures detailed materials to be used, and one of them was phosgene, a gas which is very insidious and difficult to protect against. We had to hurry up to find protection against it. The outcome was a helmet saturated with sodium phenate. The concentration of gases when used in a cloud is small, and 1 to 1,000 by volume is relatively very strong. The helmet easily gave protection against phosgene at a normal concentration of 1 part in 10,000. That helmet was used when the next attack came in Flanders, on the 19th of December. This attack was in many ways an entirely new departure and marked a new era in gas warfare.

There are three things that really matter in gas warfare, and these were all emphasized in the attack of December. They are: (1)

Increased concentration; (2) surprise in tactics; (3) the use of unexpected new materials.

Continued efforts have been made on both sides to increase the concentration. The first gas attack, in April, 1915, lasted about one and a half hours. The attack in May lasted three hours. The attack in December was over in 30 minutes. Thus, assuming the number of cylinders to be the same (one cylinder for every meter of front in which they were operating), the last attack realized just three times the concentration of the first, and six times the concentration obtained in May. Other cloud gas attacks followed, and the time was steadily reduced; the last attack gave only 10 to 15 minutes for each discharge. We believe that the cylinders are now put in at the rate of three for every 2 meters of front, and may even be double banked.

The element of surprise came in an attack by night. The meteorological conditions are much better at night than during the day. The best two hours out of the 24, when steady and downward currents exist, are the hour between sunset and dark and the hour between dawn and sunrise. Gas attacks have therefore been frequently made just in the gloaming or early morning, between lights. This took away one of the easy methods of spotting gas, that of seeing it, and we had to depend upon the hissing noises made by the escaping gas, and upon the sense of smell.

Another element of surprise was the sending out of more than one cloud in an attack. After the first cloud the men would think it was all over, but ten minutes or half an hour later there would come another cloud on exactly the same front. These tactics were very successful in at least one case, namely, the attack near Hulluch in 1916. Some of the troops discarded their helmets after the first wave and were caught on the second, which was very much stronger than the first.

Efforts were also made to effect surprise by silencing the gas. But silencers reduced the rate of escape so greatly that the loss of efficiency from low concentration more than made up for the gain in suddenness. Another method was to mix the gas up with smoke, or to alternate gas and smoke, so that it would be difficult to tell where the gas began and the smoke ended.

The last attack made on the British by this means was in August, 1916. Since that time the Germans have used gas three times on the west front against the French, and have also used it against the Italians and the Russians. It has been practically given up against the British, although the method is by no means dead.

The last attack was a slight set-back in the progress of gas defense. The casualties had been brought down to a minimum, and, as shown by the fact that the percentage of deaths was high, pro-

tection was complete in all cases where used, casualties being due to unpreparedness in some form. The attack in question was brought on under difficult conditions for the defenders, as it was made on new troops during a relief when twice as many men were in the trenches as normally. Furthermore, they had to wear helmets while carrying their complete outfit for the relief. This was the second time the Germans caught us in a relief, whether through information or luck we cannot say.

The protection that had been devised against phosgene proved effective at the time, but provision was made to meet increased concentration of phosgene. We never had any actual evidence during the attack that phosgene was being used, as no samples were actually taken from the cloud, but cylinders of phosgene were captured later. Glass vacuum tubes, about 10 by 30 cm., with a tip that could be broken off and then closed by a plasticine-lined glass cap, were distributed, but the only one that came back was an unopened tube found in a hedge, and marked by the finder "Dangerous; may contain cholera germs." In a gas attack everybody keeps quiet or else has a job on hand, and conditions are not conducive to the taking of gas samples. The original types of vacuum tube were smaller than those now used.

There was a long search for materials that would absorb phosgene, as there are few substances that react readily with it. The successful suggestion came from Russia. The substance now used very extensively by all is hexamethylenetetramine (urotropine) $(\text{CH}_2)_6\text{N}_4$, which reacts very rapidly with phosgene. Used in conjunction with sodium phenate, it will protect against phosgene at a concentration of 1:1,000 for a considerable period. An excess of sodium hydroxide is used with the sodium phenate, and a valve is provided in the helmet for the escape of exhaled air. The valve was originally devised so that the hydroxide would not be too rapidly carbonated, but it was found in addition that there is a great difference in ease of breathing and comfort if a valve is placed in the mask. The helmet is put on over the head, grasped with left hand around the neck and tucked into the jacket. This form is still used in reserve.

By this time gas shells were beginning to be used in large numbers, and it became evident that protection by a fabric could not be depended on with certainty. The box type of respirator was the next development. Respirators have to fulfill two requirements which are quite opposed to one another. In the first place they should be sufficiently large and elaborate to give full protection against any concentration of any gas, whereas military exigency requires that they be light and comfortable. It is necessary to strike a balance between these two. Upon a proper balance depends the usefulness of the respirator. Oxygen apparatus will not do on

account of its weight and its limited life. Two hours' life is excessive for that type. The side that can first force the other to use oxygen respirators for protection has probably won the war.

The concentrations of gas usually met with are really very low. As has been said, a high concentration for a gas cloud is 1 part in 1,000, whereas concentrations of 2 or 3 per cent can be met by respirators depending on chemical reactivity. One such respirator is a box of chemicals connected by a flexible tube with a face piece fitting around the contours of the face, and provided with a mouthpiece and nose piece.

As regards the chemicals used there is no secret, for the Germans have many of the same things. Active absorbent charcoal is one of the main reliances, and is another suggestion that we owe to the Russians. Wood charcoal was used in one of their devices and was effective, but most of the Russian soldiers had no protection at all.

We wanted to protect against chlorine, acids, and acid-forming gases, phosgene, etc., and at one time were fearful of meeting large quantities of hydrocyanic (prussic) acid (HCN). At one period every prisoner taken talked about the use of prussic acid, saying that the Kaiser had decided to end the war and had given permission to use prussic acid. Protection was evidently needed against it. The three things that then seemed most important were: (1) Chlorine and phosgene; (2) prussic acid; (3) lachrymators. Charcoal and alkaline permanganate will protect against nearly everything used, even up to concentrations of 10 per cent for short periods.

The German apparatus, developed about the same time, is of different pattern, and is still employed. It consists of a small drum, attached directly to the front of the face piece, and weighs less than the British respirator but must be changed more frequently. It has no mouthpiece. The chemicals are in three layers: First an inside layer of pumice with hexamethylenetetramine, in the middle a layer of charcoal (sometimes blood charcoal), and outside baked earth soaked in potassium carbonate solution and coated with fine powdered charcoal.

As regards the future of the gas cloud, it may be looked upon as almost finished. There are so many conditions that have to be fulfilled in connection with it that its use is limited. It is very unlikely that the enemy will be able to spring another complete surprise with a gas cloud.

The case is different with gas shells. The gas shells are the most important of all methods of using gas on the western front, and are still in course of development. The enemy started using them soon after the first cloud attack. He began with the celebrated "tear" shells. A concentration of one part in a million of some of these lachrymators makes the eyes water severely. The original tear shells

contained almost pure xylyl bromide or benzyl bromide, made by brominating the higher fractions of coal-tar distillates.

The German did his bromination rather badly. As you know, it should be done very carefully or much dibromide is produced, which is solid and inactive. Some of the shells contained as much as 20 per cent dibromide, enough to make the liquid pasty and inactive. The shells used contained a lead lining, and have a partition across the shoulder, above which comes the T. N. T. and the fuse. These shells had little effect on the British, but one attack on the French, accompanied by a very heavy bombardment with tear shells, put them out badly. The eyes of the men were affected, and many of the men were even anesthetized by the gas, and were taken prisoners.

Our first big experience was an attack at Vermelles. The Germans put down a heavy barrage of these shells and made an infantry attack. The concentration was great, the gas went through the helmets, and the men even vomited inside their helmets. But it is difficult to put down a gas barrage, and there is danger that it will not be a technical success. In the instance cited, certain roads were not cut off sufficiently, so that reinforcements got up. This attack, however, opened our eyes to the fact that, as in the case of gas clouds, concentration would be developed so as to make it high enough to produce the required effect under any circumstances.

When the Germans started using highly poisonous shells, which was at the Somme in 1916, they did not attend to this sufficiently, although enormous numbers of shell were used. The substance used was trichloromethyl-chloroformate, but not in great strength. It had no decided reaction on the eyes, hence the men were often caught.

The quantity of gas that can be sent over in shells is small. The average weight in a shell is not more than 6 pounds, whereas the German gas cylinders contain 40 pounds of gas. To put over the same amount of gas as with gas clouds, say in five minutes per thousand yards of front, would require a prohibitive number of guns and shells. It becomes necessary to put the shells on definite targets, and this, fortunately, the Germans did not realize at the Somme, although they have found it out since.

The use of gas out of a projectile has a number of advantages over its use in a gas cloud. First, it is not so dependent on the wind. Again, the gunners have their ordinary job of shelling, and there is no such elaborate and unwelcome organization to put into the front trenches as is necessary for the cloud. Third, the targets are picked with all the accuracy of artillery fire. Fourth, the gas shells succeed with targets that are not accessible to high explosives or to gas clouds. Take, for instance, a field howitzer, dug into a pit with a certain amount of overhead cover for the men, who come in from behind the gun. The men are safe from splinters, and only a direct hit will put

the gun out of action. But the gas will go in where the shell would not. It is certain to gas some of the men inside the emplacement. The crew of the gun must go on firing with gas masks on and with depleted numbers. Thus it nearly puts the gun out of commission, reducing the number of shots say from two rounds a minute to a round in two minutes, and may even silence it entirely. Another example is a position on a hillside with dugouts at the back, just over the crest, or with a sunken road behind the slope. Almost absolute protection is afforded by the dugouts. The French tried three times to take such a position after preparation with high explosives, and each assault failed. Then they tried gas shells and succeeded. The gas flows rapidly into such a dugout, especially if it has two or more doors.

Among the effective materials used by the Germans for gas shells were mono- and tri-chloromethyl-chloroformate. Prussic acid never appeared; the Germans rate it lower than phosgene in toxicity, and the reports concerning it were obviously meant merely to produce fear and distract the provisions for protection.

During the last five months the actual materials and the tactics used by the Germans have undergone a complete change. The lachrymator shells are less depended upon than formerly for "neutralization," but are still a source of annoyance. Mere annoyance, however, may be an effective method of neutralizing infantry. For instance, where large amounts of supplies and ammunition are being brought up there are always crossroads where there is confusion and interference of traffic. A few gas shells placed there make every man put on his mask, and if it is a dark night and the roads are muddy, the resulting confusion can be only faintly imagined. It may thus be possible to neutralize a part of the infantry by cutting down their supplies and ammunition.

The use of a gas shell to force a man to put on his mask is practically neutralization. If at the same time you can hurt him, so much the better. Hence the change in gas-shell tactics, which consists in replacing the purely lachrymatory substance by one that is also poisonous.

One substance used for this method of simultaneously harassing and seriously injuring was dichloro-diethylsulphide (mustard gas). Its use was begun in July of last year at Ypres, and it was largely used again at Nieuport and Armentières. A heavy bombardment of mustard-gas shells of all calibers was put on these towns, as many as 50,000 shells being fired in one night. The effects of mustard gas are those of a "super-lachrymator." It has a distinctive smell, rather like garlic than mustard. It has no *immediate* effect on the eyes beyond a slight irritation. After several hours the eyes begin to swell and inflame and practically blister, causing intense pain, the

nose discharges freely, and severe coughing and even vomiting ensue. Direct contact with the spray causes severe blistering of the skin, and the concentrated vapor penetrates through the clothing. The respirators of course do not protect against this blistering. The cases that went to the hospitals, however, were generally eye or lung cases, and blistering alone took back very few men. Many casualties were caused by the habit that some of the men had fallen into of letting the upper part of the mask hang down so as not to interfere with seeing. The Germans scored heavily in the use of this gas at first. It was another example of the element of surprise in using a new substance that produces new and unusual symptoms in the victims.

Up to the present time there has been no material brought out on either side that can be depended on to go through the other fellow's respirator. The casualties are due to surprise or to lack of training in the use of masks. The mask must be put on and adjusted within six seconds, which requires a considerable amount of preliminary training, if it is to be done under field conditions.

Among other surprises on the part of the Germans were phenylcarbylamine chloride, a lachrymator, and diphenylchloroarsine, or "sneezing gas." The latter is mixed in with high explosive shells or with other gas shells, or with shrapnel. It was intended to make a man sneeze so badly that when he puts on his mask he is not able to keep it on. The sneezing gas has, however, not been a very great success.

All bombardments now are of this mixed character. The shells used are marked with differently colored crosses, and definite programs are laid down for the use of the artillerymen.

As regards the future of gas shells, it should be emphasized that the "gas shell" is not necessarily a gas shell at all, but a liquid or solid shell, and it opens up the whole sphere of organic chemistry to be drawn upon for materials. The material placed inside the shell is transformed into vapor or fine droplets by the explosion and a proper adjustment between the bursting charge and the poisonous substance is necessary. Both sides are busy trying to find something that the others have not used, and both are trying to find a "colorless, odorless, and invisible" gas that is highly poisonous. It is within the realm of possibilities that the war will be finished, literally, in the chemical laboratory.

The Germans have not altered their type of respirator for some time, and it is not now equal in efficiency to the British or American respirator. The German respirator, even in its latest form, will break down at a concentration of 0.3 per cent of certain substances. The German design has given more weight to military exigency, as against perfect protection, than has the British. Another thing that weighs against changes in design is the fact that the German,

already handicapped by the lack of certain materials, must manufacture 40,000,000 respirators a year in order to supply his Austrian, Bulgarian, and Turkish allies, as well as his own army.

In the British and American Armies the respirator must always be carried with the equipment when within 12 miles of the front. Between 12 and 5 miles a man may remove the respirator box in order to sleep, but within 5 miles he must wear it constantly. Within 2 miles it must be worn constantly in the "alert" position (slung and tied in front). When the alarm is given he must get the respirator on within six seconds. The American respirator is identical with the British. The French have a fabric mask made in several layers, the inner provided with a nickel salt to stop HCN, then a layer with hexamethylenetetramine; it has no valve and is hot to wear. The French also use a box respirator, consisting of a metal box slung on the back, with a tube connecting to the face mask; the latter is of good Para rubber and is provided with a valve. One disadvantage of this form is the danger of tearing the single rubber sheet. The German mask now contains no rubber except one washer; the elastic consist of springs inside a fabric, and the mask itself is of leather. It hardens and cracks after being wet, and is too dependent upon being well fitted to the face when made. (The lecturer exhibited various types of gas shells, helmets, masks, and respirators.)

The following compounds have been used by the Germans in gas clouds or in shells:

1. Allyl-iso-thiocyanate (Allyl mustard oil), C_3H_5NCS (shell).
2. Benzyl bromide, $C_6H_5CH_2Br$ (shell).
3. Bromo-acetone, $CH_3Br.CO.CH_3$ (hand grenades).
4. Bromated methyl-ethyl-ketone (bromo-ketone), $CH_3Br-COC_2H_5$ or $CH_3.CO.CHBr.CH_3$ (shell). Dibromo-ketone, $CH_3COCHBr.CH_2Br$ (shell).
5. Bromine, Br_2 (hand grenades).
6. Chloro-acetone, $CH_3Cl.COCH_3$ (hand grenades).
7. Chlorine, Cl_2 (cloud).
8. Chloromethyl-chloroformate (Palite), $ClCOOCH_2Cl$ (shell).
9. Nitro-trichloro-methane (chloropierin or nitrochloroform), CCl_3NO_2 (shell).
10. Chlorosulphonic acid, $SO_3.HCl$ (hand grenades and "smoke pots").
11. Dichloro-diethylsulphide (mustard gas), $(CH_3ClCH_2)_2S$ (shell).
12. Dimethyl sulphate, $(CH_3)_2SO_4$ (hand grenades).
13. Diphenyl-chloro-arsine, $(C_6H_5)_2AsCl$ (shell).
14. Dichloromethyl ether, $(CH_2Cl)_2O$ (shell).
15. Methyl-chlorosulphonate, CH_3ClSO_3 (hand grenades).

16. Phenyl-carbylamine chloride, $C_6H_5NCCl_2$ (shell).
17. Phosgene (carbonyl chloride), $COCl_2$ (cloud and shell).
18. Sulphur trioxide, SO_3 (hand grenades and shell).
19. Trichloromethyl-chlorformate (diphosgene, superpalite), $CLCOOCCl_3$ (shell).
20. Xylyl bromide (tolyl bromide), $CH_3C_6H_4CH_2Br$ (shell).

THE HISTORY OF MERCURY.

By OTTO REUBENHEIMER.

Owing to the great importance of mercury in medicine, pharmacy, dentistry, chemistry, and technology its history should prove of interest to the members of the American Pharmaceutical Association, and especially those attending the sessions of the historical section.

The etymology of the word is worth knowing. The present Latin name Hydrargyrum is derived from the Greek Hydrargyros, which means "water silver" or "liquid silver." The English name mercury comes from the Latin Mercurius, the god of commerce and special patron of messengers and thieves in Roman mythology. This name was evidently given to the metal on account of its mobility and volatility.

The history of mercury dates back to old China, India, and Egypt. It is said that the Chinese already used it as a remedy against syphilis. In old documents mercury is mentioned by the great Greek philosopher Aristoteles (384-322 B. C.) and by Theophrastus, the father of botany, about 315 B. C. The name Argentum Vivum, that is, "alive silver" or "quicksilver," was given to the mercury found in the liquid state. Mercury obtained from cinnabar was named Hydrargyros in Greek or Hydrargyrum in Latin by Dioscorides (about 50 A. D.), the father of the old Materia Medica, who in his works also points out that cinnabar was frequently confused and adulterated with minimum, the red oxide of lead. The ancients supposed that Argentum Vivum and Hydrargyrum were not alike and possessed different properties. The alchemists named the metal Mercurius Vivus on account of its properties.

The name Mercurius and the association of the metal with the smallest of all major planets, the planet nearest to the sun, is first authentically mentioned in a list of metals by Stephanus of Alexandria in the seventh century. It is, however, well known that the old Babylonians connected the planets and their gods, and with them "Naba" or Mercury was the god of revelations and priestly wisdom. The star gods were very prominent in the cultus of Babylon.

Plinius, the Roman historian, and Claudius Galenus, the Roman physician-pharmacist, speak of mercury as a poison! According to Pliny, the Romans obtained about 10,000 pounds of cinnabar every year from Almaden in Spain.

The important use of mercury for extracting gold and silver dates back to the ancients. Pliny records in his seventh book that quicksilver is employed for separating the noble metals from earthly matter and also in gilding.

Mercury was used by the Venetians in the preparation of tin amalgam for silvering mirrors as early as the sixteenth century.

The Arabs inherited their medical knowledge from the Greeks, the Arabs introduced chemicals into pharmacy and medicine, and the Arabian alchemists enriched chemistry with a great many discoveries. Among the latter, Abu-Musa-Dschafar-al-Sofi, commonly called Geber, which is the translation of his middle name (699-756), was the so-called *Magister Magistrorum*. He described and used the metal mercury and was perhaps the first to recognize its valuable property to form amalgams, inasmuch as it softens gold. Geber, furthermore, was the first to prepare red precipitate and to sublime mercuric bichloride or corrosive sublimate.

In connection with the history of mercury it might be well to mention Geber's theory as to the chemical composition of metals, which found universal recognition up to the later Middle Ages. All metals consist of sulphur and mercury, which are present in different proportions and in different degrees of purity. Sulphur, on account of its combustibility, causes the alteration of metals when heated, and mercury imparts, luster, malleability, fusibility and other metallic properties.

Rhazes (850-923), * * * the Galen of his time, introduced mercurial ointment and employed bichloride externally against the itch. Mesué (925-1015) used mercury in his *Emplastrum expertum ad scabiem* and in various skin diseases. Avicenna (980-1037), the greatest of all the Morish physicians, considered corrosive sublimate as the most deadly of all poisons, but was the first to express his doubts as to the poisonous nature of the metal, having observed that it passed through the body unchanged and without any bad effects.

During the medieval period mercury became an internal remedy against worms in cattle and sheep. According to such an authority as Sprengel, Pierandrea Mattioli (1501-1577), the celebrated botanist and physician to Archduke Ferdinand and Emperor Maximilian II of Austria, was the first to administer the metal mercury internally to human beings. The internal administration of mercurials was popularized by Paracelsus (1493-1541), whose full name is Philippus Aureolus Theophrastus Paracelsus Bombastus von Hohenheim. This iconoclast (image-breaker) of medicine became the

founder of Iathrochemistry or medical chemistry and deserves an everlasting credit for introducing the mercurials into the *materia medica* as a specific against *Morbus Gallicus* or syphilis.

"One night with Venus and seven years with Mercury" has been the proverbial adage ever since. Paracelsus administered corrosive sublimate, red precipitate and mercuric nitrate. He also originated the process of preparing red mercuric oxide by heating the nitrate.

As a remedy for syphilis, mercury was employed in the form of fumigations, frictions, ointments and plasters. Mercurial plaster was originated by John de Vigo of Naples, physician to Pope Julius II, when during the summer of 1493 syphilis raged throughout western Europe.

Beginning with the fifteenth century, attempts were made to extinguish or "kill" mercury, that is, to finally subdivide it in preparations containing the metal. It is well acknowledged that mercury in the state of minute subdivision has distinctive physiologic effects and that the more perfectly the mercury is "killed," the more efficient is the compound.

The first mercurial pills were originated about 1540 by Barbarossa II, King of Algiers and Admiral to the Turkish Fleet. The formula which was sent to Francis I, King of France, contained metallic mercury, which was extinguished with the juice of roses. One of the most recent "killed" mercury preparations is gray powder or mercury with chalk, which was originated by the celebrated London syphilologist, Dr. Jonathan Hutchinson, F. R. S.

Quicksilver girdles or belts were made by the application of mercury with the whites of eggs and were at one time employed in the treatment of itch.

In 1759 Prof. Braun, of St. Petersburg, was the first to solidify mercury. During that winter the thermometer registered -34°F . and when Braun placed it into a mixture of snow and nitric acid the mercury sank with great rapidity, owing to its contraction, to 352°F . When the professor took the bulb, he saw what had never been seen before, namely, solid mercury. Instead of the eternal fluid, he had before him a metallic mass, which could be hammered like lead. Since that day mercury was properly classified among the true metals.

A very important mark stone in the history of mercury is the performance of Torricelli's experiment in 1643. It remains an everlasting credit to this pupil of Galileo to have determined the pressure of the atmosphere as the equivalent of 30 inches or 760 mm. of mercury. The barometer was the direct result of this experiment.

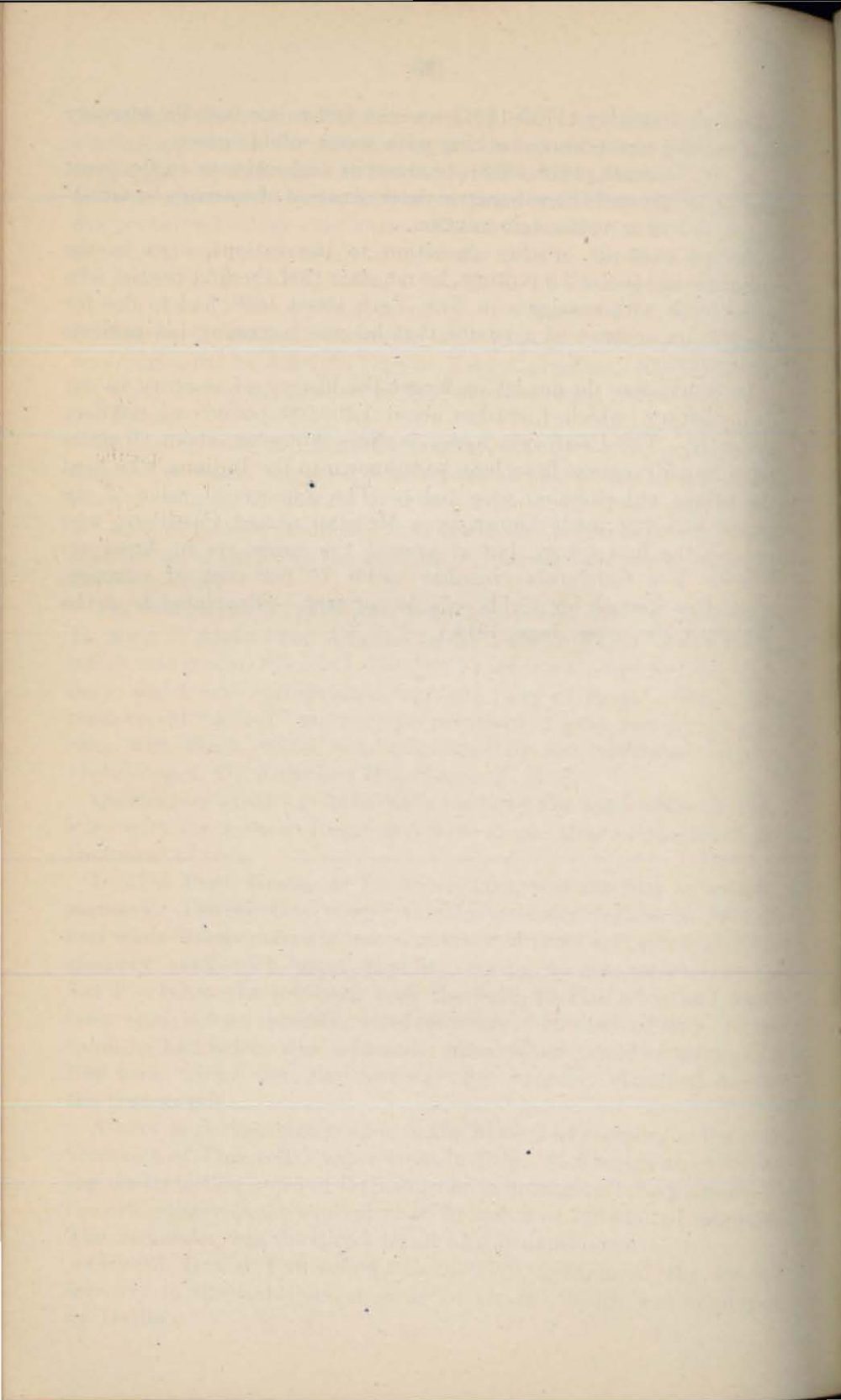
Gabriel Daniel Fahrenheit, about 1720, introduced the use of mercury in thermometers, in place of alcohol, which was employed by Galileo.

Joseph Priestley (1733-1804) was the first to use metallic mercury as a sealing agent when working with water-soluble gases.

K. W. Hempel (1819-1898), pharmacist and assistant to the great Liebig, originated the volumetric determination of mercury by titrating with iodine volumetric solution.

As an example of the opposition to innovations, even in the enlightened nineteenth century, let me state that the first dentist who filled teeth with amalgam in New York about 1830, had to flee for his life on account of a rumor that he was poisoning his patients with mercury.

In conclusion, do not let us forget the history of mercury in our own country, which furnishes about 1,000,000 pounds of mercury annually. The California mines in New Almaden, about 60 miles from San Francisco, have long been known to the Indians, who used the bright red cinnabar as a paint. The commercial value of the mines was first made known by a Mexican named Castillero, who became the first owner, but at present the mines are in American hands. The California cinnabar yields 70 per cent of mercury, while the Spanish ore yields only 30 per cent. (Reprinted from the WESTERN DRUGGIST, June, 1918.)





Hospital Corpsmen Commended

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WITH THE AMERICAN ARMY AT THE FRENCH FRONT.

(Reprinted from the Washington Star of June 15, 1918.)

"Goodbye! Get through somehow, for we must have bandages." Thus spoke Maj. Paul T. Dessez, of Washington, a regimental surgeon, as he shook hands, fearing it was for the last time, with Chief Pharmacist's Mate Harry W. Jarvis, United States Navy, of Philadelphia.

The surgeon, with sleeves rolled above the elbows, had stepped out for a moment from the barn used as a dressing station. Wounded French and American soldiers covered the floor. Others were lying on the less exposed side of the building, which was being shelled with high explosives and shrapnel. Two French soldiers received additional wounds a few seconds after the words quoted had been uttered.

Bandages brought through fire.—Bandages had run low. Jarvis volunteered to make a trip to the rear on a motorcycle, though the chances of getting through alive were small. However, he made the trip and returned. This was merely one of many acts of bravery of medical corpsmen in the week's fighting west of Chateau Thierry.

Maj. Dessez himself was buried by shell fire, but dug himself out and kept on working. Capt. Richard O'Shea, of Westerly, R. I., assistant surgeon, showed a rent in his coat made by a shell splinter.

"I want you to go up to Lucy-le-Bocage and evacuate wounded when the barrage is lifted," said Maj. Dessez to a hospital apprentice standing at attention. "Now, uphold the reputation of the 'leather necks.'"

"They will bring them all out, too," he said, confidently, as the man left.

Surgeon works with mask on.—In one of the night bombardments a dugout used by the surgeons as a first-aid post in a certain town

was demolished. Maj. Lester A. Pratt, of Bellefontaine, Ohio, though his face was scratched by a shell splinter, transferred the dressing station to a ditch by the roadside and continued at work for four hours while wearing a gas mask.

German prisoners were carrying in wounded. The intensity of the enemy shrapnel fire was such that three of them were killed at the doorway of the dressing station. Capt. Orlando S. Petty, of Philadelphia, an assistant surgeon, was operating in a ditch on the opposite side of the road, which was lit up by the flashes from exploding shells.

Finally, the surgical dressings caught fire. Unable to work any longer, the doctors were compelled to evacuate the place under a deluge of high explosive shells.

Pharmacist's Mates LEE J. McDANIEL, of Newport, R. I.; FRANK O. TIBBERTS, of Dorchester, Mass.; CLAUDE MATTINGLY, of Santa Rosa, Cal.; and Hospital Apprentice RAY J. ISREAL, of Allentown, Pa.,¹ were assisting the surgeons. Twenty wounded Americans and 30 wounded Germans were lying at the roadside at the time. The men named removed the entire 50, carrying them to the nearest point to which the jitney ambulances could come.

Belgian police dog saved.—After the wounded had been taken away McDaniel and Israel returned and unchained the major's Belgian police dog, a pet named "Boche," and led the terrified canine to safety. The next day McDaniel, who seemed to bear a charmed life, with Pharmacist's Mate MARION L. TURNER, of Milwaukee, Wis., made five trips through the barrage to reach wounded, bandage them, and bring them out.

The sublimest deed of heroism performed was that of another pharmacist's mate, a New York State boy, whose name the censorship does not permit me to give. He had made his way to the side of a wounded man and, though struck in his own heel by a bullet, continued to stanch his comrade's flow of blood. A second bullet pierced his skull.

He conscientiously handed his diagnosis card to the wounded man, saying "Send it in, I am done for." With these words he fell over and died. Others picked up the wounded man whose life was saved, with the tag, which had been filled out to the last in accordance with duty.

Pharmacist's Mate JOSEPH COFFEE, of Fort Wayne, Ind., crawled out into a wheat field which was being sprayed with machine-gun bullets as if with rain, bandaged the injuries of a wounded man and, crawling along, dragged him until the shelter of the woods was reached. This performance he repeated until the machine guns were silenced.

¹ All members of the Hospital Corps of the Navy.

Washington student on duty.—Hospital Apprentice GEORGE A. JONES, of Brooklyn, N. Y., a graduate of a Jesuit school in Washington, D. C., gave a courageous example of faithfulness, dressing the wounds of his fallen comrades while under machine-gun fire. When exhausted he made his way back to the regimental hospital unassisted, refusing aid until all the others had been cared for.

Pharmacist's Mate ALGERNON G. BRUMBLEE, of Spray, N. C., located a machine-gun sniper's pit by offering himself as a target. Unwounded he returned, signaled the position, and had the satisfaction of seeing the first shell send the gun and crew into the sky in the shape of fragments.

Hospital Apprentice GUS L. TAYLOR, of Birmingham, Ala., crossed an open field four times and saved two wounded men who otherwise would not have received attention. Pharmacist's Mate ROY A. MESSEANELLE, of Troy, N. Y., when knocked down by a shell explosion, pulled himself together, dressed the wounds of six comrades, and went back for aid to carry them out.

WHEN THE "FLORENCE H." EXPLODED.

(Reprinted from the Fleet Review of July, 1918.)

The gallant work of United States naval vessels in rescuing the survivors of the *Florence H.* when that steamship was destroyed by a fire and explosion on the night of April 17 has been made the subject of special reports.

Rear Admiral Wilson praises in high terms all the officers and men of the vessels which were engaged in the work of rescue. He especially commends Lieut. H. S. Haislip, F. M. Upton, Quartermaster, third class; and J. W. Covington, ship's cook, third class.

On this occasion that any lives were saved was due to the heroic conduct displayed by the United States naval vessels which happened to be in the vicinity at the time of the incident. The sea to leeward of the wreck was covered by a mass of boxes of smokeless powder which were repeatedly exploding, and amongst this wreckage were a number of survivors. The wreckage was so thick that small boats were unable to reach these men. The heat from the burning vessel in the vicinity was so intense that the converted yachts present, with wooden upper works, could not safely penetrate the wreckage. Under these conditions Lieut. Haislip took his vessel at high speed into the midst of the wreckage, at considerable risk of detonating the depth charges carried on his vessel, and made lanes through which the small boats lowered by his and other vessels could reach the survivors.

Of the two enlisted men he says:

F. M. Upton, quartermaster, third class, and J. W. Covington, ship's cook, second class, plunged overboard to rescue a survivor of the *Florence H.* who was surrounded by powder boxes and who was too exhausted to help himself. They did this fully realizing that similar powder boxes in the vicinity were

continually exploding and that they thereby were risking their lives in saving the life of this man. It is recommended that they be awarded gold life-saving medals and medals of honor.

Admiral Wilson issued a special order to the forces under his command, in which he said:

The conduct of the officers and men attached to these vessels was in accord with the best traditions of our service, and by reason of their heroic efforts 34 survivors of a crew of 75 were rescued under conditions in which it appeared that all on board the *Florence H.* must have perished. Due to the prompt and gallant action of these vessels, it appears that all who were not killed in the flames of the *Florence H.* were rescued.

Besides Upton and Covington the men who manned the boats which took part in the work of rescue were mentioned in orders as worthy of commendation, and among them were: GEORGE C. MANLEY, pharmacist's mate, second class, United States Naval Reserve Force; HARRY E. LeBAS, pharmacist's mate, first class.

ASSISTANCE EXTENDED SURVIVORS OF "FENIMORE."

U. S. NAVAL HOSPITAL SHIP, U. S. S. *Mercy*,
(CARE OF POSTMASTER FORTRESS MONROE, VA.)

June 27, 1918.

From: Commanding Officer.

To: Bureau of Medicine and Surgery.

Subject: Report of assistance extended survivors of *Fenimore*.

5. The commanding officer has much pleasure and satisfaction in calling attention to the efficient performance of this duty by all hands, both Medical Department and crew. The former was in charge of Passed Assistant Surgeon T. L. Ramsey, R. F., assisted by Pharmacist (T) R. H. STANLEY, United States Navy, and the latter in that of First Officer T. F. Gorman, N. A. S. These officers did not hesitate to go close alongside the burning ship, while small-arm ammunition was exploding and bullets flying, and remained in the most exposed positions as long as they could be of any service in saving human life. The discipline and action of all hands reflects much credit upon them and the ship to which they belong.

W. J. BLACKWOOD.

REPORT FROM MARINE HEADQUARTERS.

RECOMMENDATIONS FOR DISTINGUISHED CONDUCT AND SERVICE IN FACE OF THE ENEMY, BY REGIMENTAL COMMANDER, SIXTH REGIMENT, JUNE 10, 1918.

Pharmacist's Mate (2d class) CLIFFORD WHISTLER, Hospital Corps, United States Navy, while attached to the Seventy-eighth (E) Company repeatedly gave aid to the wounded while under artillery fire between the dates of June 2 and 9, 1918.

In the attack made by the Fifth Regiment in the Bois de Belleau on the night of June 6, the following men of the United States Navy Hospital Corps were conspicuous for the coolness and value of their work under shell fire, evacuating wounded men at the imminent risk of their lives: Hospital Apprentice (1st class) JOHN E. JUSTICE, Pharmacist's Mate (3d class) JOHN H. BALCH.

Pharmacist's Mate (3d class) JOHN Q. WILLIAMS, Hospital Corps, United States Navy, attached Third Battalion, conspicuous in his services in attending the wounded men on the field under heavy machine-gun fire prior to the capture of Bouresche, June 6.

Hospital Apprentice (1st class) WILLIAM B. EVANS, Hospital Corps, United States Navy, attached Company M, in the capture of the town of Bouresche, June 6, 1918, showed rare devotion to duty and courage in caring for the wounded while under fire.

Pharmacist's Mate (3d class) OSCAR S. GOODWIN, United States Navy, and Sergt. SIDNEY COLFORD, Jr., at imminent risk of their lives under shell and machine-gun fire, were instrumental in removing the regimental commander, when wounded on June 6, early in the operations which resulted in the capture of the town of Bouresche and the occupation of the Bois de Bellau. Struck down by a sniper's bullet, these men removed him from further danger, regardless of the fire sweeping the point where he lay, meeting a sudden crisis promptly and completely.

Pharmacist's Mate (1st class) PERCY V. TEMPLETON, United States Navy, and Hospital Apprentice (1st class) JAMES L. WEDDINGTON, United States Navy, during extremely heavy shell fire June 10, carried wounded for several hours, loading them into ambulances, assuring their safety at risk of death to themselves.

Pharmacist's Mate (first class) EMMETT C. SMITH, United States Navy, and Hospital Apprentice (first class) ARTHUR L. PIFER, United States Navy, dressed and evacuated wounded from a wheat field struck by heavy artillery and machine-gun barrage on June 6, in the course of the operations which resulted in the capture of Bouresche. At a time when the losses threatened to prevent the success of this operation the heroic conduct of these men steadied the line and spurred the attacking platoons on through barrage fire.

Chief Pharmacist's Mate GEORGE G. STROTT, United States Navy, rendered valuable services as chief aid at the regimental aid station in the care and evacuation of many wounded from June 1 to June 10. Although under heavy bombardment at times he performed his labors without faltering, and by rare fidelity to duty preserved accurate records of all officers and men of the various organizations which passed through the regimental aid station; a fine type of a courageous and faithful man.

NEW EXAMINATION REPORT.

The Bureau of Medicine and Surgery in issuing the new examination reports for hospital corpsmen N.M.S.H.C. 1 and 5 and the pharmacists' examination report, N.M.S.H.C. 6, has endeavored to draft forms which will enable examining boards to gain a better idea of the candidate's fitness for promotion and to obtain a more uniform examination for the various grades than has been possible in the past. Fitness for promotion to any grade or rate depends not only on the ability of the candidate to pass the mental examination, but to a great extent on (*a*) his experience, (*b*) his temperamental qualities, (*c*) his intelligence. Experience gained in the various ratings of the Hospital Corps is a requisite before a man can efficiently perform the duties of the higher grades or rates. This applies in all walks of life to a certain extent, but probably in no other location to a greater degree than it does in the Navy. Temperamental qualities should be given due weight, and an idea of the candidate's temperament can best be obtained from the officer with whom he has been serving. A man may have long experience and a high degree of intelligence and still, by reason of laziness or distaste for the duties of a hospital corpsman, be totally unfitted for promotion; or again, he may have long experience, good general aptitude, and steadiness but a general education that makes it difficult for him to gain the knowledge needed for the work of the corpsman in the higher ratings. There is no desire or intention on the part of the Bureau of Medicine and Surgery to hinder or restrict promotions in the Hospital Corps. Men of the higher ratings are in demand far in excess of the supply. It is hoped that the new forms, by giving a picture as complete as possible of the candidate's abilities, professional, temperamental and practical, will help medical officers select the best all-around men for promotion by weighing carefully all the candidate's abilities, instead of accepting, as in the past, the result of a mental examination only, which, though still demanded, should not constitute the sole test of the candidate's abilities for promotion.

This form is here reproduced:

N.M.S.H.C. 6.

EXAMINATION REPORT.

PHARMACIST (TEMPORARY) OR PROVISIONAL PHARMACIST.

DIRECTIONS.

The Bureau of Medicine and Surgery desires that only experienced, well-trained, capable, and dependable chief pharmacist's mates be recommended by medical officers for examination for warrant rank, and then only if the individual has a marked and exceptional aptitude for the Hospital Corps, and a degree of executive ability, initiative, tact, and experience well above the average. The naval pharmacist should have knowledge and experience as well as capability sufficient to enable him to take the leading position in the Hospital Corps of the Navy especially at Hospital Corps schools and hospitals or aboard ship.

Page 2 of this form is to be filled out by the senior medical officer with whom the candidate is serving and forwarded to the examining board for its information.

Pages 3 and 4 are to be filled out by the members of the examining board.

References (N. R. 3317 (2) Manual of the Medical Department, chapter 8, section 9): Should the applicant fail to demonstrate, after a careful practical examination, conducted in accordance with the outline on page 3, that he is not qualified for the duties of a naval pharmacist, the written examination need not be conducted and the candidate should be advised to withdraw.

U. S. S. _____,
_____, 191 .

To: Bureau of Medicine and Surgery.

Via: Examining Board.

Subject: Qualifications of _____ for the rank of
Pharmacist, (Temporary) Provisional Pharmacist, NRF. Strike
out term not to be used).

1. Is the candidate a well-trained, capable, dependable chief pharmacist's mate with a thorough and complete knowledge of the duties of a chief pharmacist's mate?

2. Has the candidate shown by his work that he has knowledge that will enable him to perform the duties of a naval pharmacist? (Manual Medical Department, chapter 8, section 9.)

3. Assign a tentative mark on the following subjects, based on 4 as perfect:

(a) Clerical (naval hospitals and hospital ships); medicine and surgery forms, navigation forms, files, correspondence.

(b) Commissary (naval hospital); commissary ledger, methods of obtaining commissary supplies, food inspection, detection of adulterants.

(c) Property accounting; bill book, methods of obtaining supplies, preservation and care of property, inventories, surveys and expenditures, preparation of regulation vouchers.

(d) Instruction of hospital corpsmen.

4. Has he initiative? _____ Dependability? _____ Originality?
_____ Energy? _____ Leadership? _____

5. Does he show tact in his relations with hospital corpsmen? _____
Nurses? _____ Medical Officers? _____ Civil employees? _____

6. Is he neat in appearance and officer-like in bearing? -----
7. Has the candidate ability or training in special subjects; if so, what? -----
8. For how long a period has the applicant been under your observation? -----
9. Do you unqualifiedly recommend him morally, mentally, and professionally for this appointment? -----

(Senior medical officer with whom candidate is serving.)

(If candidate is on ship to which no medical officer is attached, this page to be signed by commanding officer.)

PRACTICAL EXAMINATION FOR PHARMACIST (T) OR (NRF).

	Marks. ¹	Time.
1. Pharmacy (materia medica and toxicology): A thorough practical familiarity with the current Pharmacopoeia, preparation of medicines from crude drugs, such as powders, extracts, tinctures, infusions, assays, etc., proper administration of medicine as to form, method, dose, etc., to be given; compounding of prescriptions, preparation of antidotes, use of concentrated stock solutions, and proper storage of supplies.....		
2. Chemistry (organic and inorganic): The carrying out of certain qualitative and quantitative analyses, urinalysis, water analysis, and the examination of foods and drugs for preservatives and adulterants.....		
3. Minor surgery: Application of splints, bandages, dressings, etc., emergency surgery, such as placing of ligatures and sutures; arrest of hemorrhage; treatment of shock, operating room, surgical preparation and technique; general first-aid measures, use of stretchers, field transportation, and drills outlined in the Drill Book for the Hospital Corps.....		
4. Administration:		
(a) Administration and internal organization of naval hospitals according to regulations and instructions in the Manual for the Medical Department, United States Navy.....		
(b) Hospital supplies and property accountability, preparation of requisitions, vouchers, invoices, services, outfits, supplies, and transfer of stores according to regulations and instructions in the Manual for the Medical Department, United States Navy.....		
(c) Commissary supervision; measures to be taken for the purchase, inspection, supervision, and disposition of all stores and equipment of the commissary department, preparation of bills of fare, foods, special diets; management of storerooms, pantries, kitchens, and mess halls. (Manual for Medical Dept. U. S. Navy.).....		
(d) Clerical duties; supervision of general correspondence, preparation of official, unofficial, and civil letters, indorsements, reports, and returns, care of records, and use of blank forms of the medical department.....		
5. Officer-like qualities as determined by the candidate's general appearance, alertness, executive ability, and ability to handle men.....		
6. The board will assign a mark in each subject in which the candidate was examined, stating time occupied in each subject.....		
Total.....		

¹ Marks based on scale of 4 as per page 2, paragraph 3.

WRITTEN EXAMINATION FOR PHARMACIST (T) OR (NRF).

The examining board will select questions in the following subjects, allowing the candidate sufficient time to complete his answers in each subject before giving him questions on the next subject:

- 8 questions in pharmacy.
- 4 questions in chemistry.
- 4 questions in hygiene and sanitation.
- 4 questions in clerical procedure.
- 4 questions in administration, selected from the following: (a) Manual for Medical Department, United States Navy; (b) Navy Regulations and Naval Instructions.
- 4 questions in commissary supervision.
- 4 questions in minor surgery and first aid.
- 4 questions in anatomy and physiology.
- 4 questions in materia medica.
- 4 questions in toxicology.

After completion of the examination, the candidate's written questions and answers will be forwarded to the Bureau of Medicine and Surgery, filled out completely.

The written questions should be broad in scope and of a character to bring out the candidate's knowledge on each subject.

The following certificate, signed by the candidate, to accompany papers:

"I certify that I have received no unauthorized aid from any source in answering the questions of this examination."

(Candidate's signature.)

To: Bureau of Medicine and Surgery.

(1) Forwarded examination papers attached.

NEW HOSPITAL CORPS FORMS.

1. Examination Report (N.M.S.H.C. 1).
2. Efficiency Report (N.M.S.H.C. 2). (Old form.)
3. Disposition Card (N.M.S.H.C. 3).
4. Roster Report (N.M.S.H.C. 4).
5. Statement of Special Qualifications for Pharmacist's Mates, first class, and Chief Pharmacist's Mates (N.M.S.H.C. 5).
6. Examination Report, Pharmacists (T) and U.S.N.R.F. (N.M. S. H.C. 6)¹ Special qualifications, Candidates for Pharmacists (T) and U.S.N.R.F.

The above forms, with the exception of No. 2 (efficiency report), have recently been revised and are now ready for issue. All of these forms are given the designation N.M.S.H.C. (Navy Medicine and Surgery Hospital Corps). The new forms are obtainable from the Naval Medical Supply Depot, Brooklyn, N. Y., on Form O, with the exception of N.M.S.H.C. 6, which is obtainable from the Bureau of Medicine and Surgery by letter, when a candidate for the grade of Pharmacist (T) or Pharmacist (NRF) requests examination.

¹ Authorized 2826-564 July, 1918; obtainable from Bur. M. & S. by letter

N. M. S. H. C. 1, Examination Report, Hospital Corps: The new form supersedes the old examination report, Hospital Corps, and is combined with N. M. S. H. C. 5, Special Qualifications for Pharmacist's Mates, first class, and Chief Pharmacist's Mates. When a candidate presents himself for first enlistment in the Hospital Corps this form N. M. S. H. C. 1, is filled out by the medical officer conducting the examination. Only such parts of the report as apply to first enlistment need be filled out and the form should be forwarded direct with the yellow disposition card to the Bureau of Medicine and Surgery. When a corpsman presents himself for promotion to a higher rating, this form (N. M. S. H. C. 1) should be completely filled out in duplicate by the medical officer with whom he is serving as far down as "Report of Examining Board," and the duplicate copies forwarded to the examining board. The examining board then conducts the examination in accordance with Bureau of Navigation's Circular of January 1, 1918, the Manual for the Medical Department, and Navy Regulation, and, after examining the candidate, assigns marks and forwards one copy to Bureau of Medicine and Surgery direct and one copy to the commanding officer having custody of the candidate's accounts. In the case of Pharmacist's Mate, first class, and Chief Pharmacist's Mate, the candidate's questions and answers will also be forwarded to the Bureau.

N. M. S. H. C 2: No change.

N. M. S. H. C. 3, Disposition Card, Hospital Corps—double yellow card perforated for division: Both cards should be filled out upon the arrival of a hospital corpsman at a ship or station; the red ink card should be forwarded immediately to the Bureau of Medicine and Surgery, the black ink card to be kept on file until the hospital corpsman is transferred or otherwise disposed of, when it is to be completed and forwarded to the Bureau of Medicine and Surgery; also to be filled out and forwarded to the Bureau of Medicine and Surgery upon first enlistment or enrollment, reenlistment or reenrollment, upon change of rate to or from the Hospital Corps and upon discharge or cessation of active duty. The purpose of this report is to keep the Bureau of Medicine and Surgery informed of all movements of hospital corpsmen, including pharmacists.

N. M. S. H. C. 4, Roster Report, Hospital Corps, to be forwarded from naval hospitals and receiving ships within the continental limits of the United States, weekly; from other naval hospitals, offices of medical aides to commandants, hospital ships, Hospital Corps schools, and training stations, monthly; from force surgeons and others when practicable. The only change in this form is the addition of a complement column and includes a report of the complement authorized and the complement actually on board.

N. M. S. H. C. 5, Special Qualifications, Pharmacist's Mates, first class, and Chief Pharmacist's Mates. This form is now printed on the back of the examination report (N. M. S. H. C. 1). It is to be filled out as before only in the case of applicants for the rating of pharmacist's mates, first class, and chief pharmacist's mates, acting, and permanent, by the medical officer under whom the applicant is serving.

N. M. S. H. C. 6, Examination Report, Pharmacist (T) and Pharmacists (NRF): This form has recently been drawn up in an endeavor to standardize and make examination for pharmacists uniform throughout the Service. The form embodies (a) Statement by the medical officer under whom the candidate is serving as to his qualifications for promotion; (b) practical examination, thorough in scope, with marks assigned by the examining board; (c) a written examination. This form is to be completely filled out for all candidates for the grade of Pharmacist (T) and Pharmacist (USNRF), and forwarded to the Bureau of Medicine and Surgery with the candidate's questions and answers.

THE CHIEF PHARMACIST'S MATE.

Bureau of Navigation's Circular Letter No. 87-18, of May 17, 1918, states—

A chief pharmacist's mate, acting, should be sufficiently trained and experienced to be a capable, dependable, efficient, first-aid man, upon whom the commanding officer of a vessel to which no medical officer is attached, can rely for assistance in the handling of minor medical and surgical emergencies, and who can be trusted to efficiently take charge of the medical property and records of a naval vessel.

While it is comparatively easy for the hospital corpsman to get instruction and experience in the field of first aid, it is much more difficult for him to get the clerical knowledge he should have to become a capable chief pharmacist's mate.

The following questions are given here for the hospital corpsman who is ambitious and who expects to become a chief pharmacist's mate in the Navy as soon as he is able to qualify. The questions present a few of the clerical problems that will come to the chief pharmacist's mate of a naval vessel. Take one question a week and struggle with it. Try to answer it. Get hold of the Medical Department forms needed to answer it. Study the following and from them extract your answer:

Handy Book for the Hospital Corps.

Manual for the Medical Department.

Instructions printed on Medical Department forms.

Get to a typewriter, if you can, and work out your answer carefully and completely in a typewritten form, and, when opportunity affords, go to some experienced chief pharmacist's mate or to some medical officer who is interested, and ask if the answer is correct and complete. Each of these questions may be somewhat difficult to answer, but if you are successful in your struggle to answer them all completely and correctly you will have taken a definite step toward becoming a competent chief pharmacist's mate.

The subjects in which a chief pharmacist's mate is examined are given in detail in chapter 4, Manual Medical Department. The way in which a hospital corpsman is examined for advancement in rating is given in the Bureau of Navigation's Annual Circular, 1918.

QUESTIONS IN CLERICAL PROCEDURE.

1. Detail the various ways of obtaining Medical Department supplies on a cruising vessel.

2. Outline the procedures and forms used for receipts from the medical supply depot; issue to a ward; transfer to another medical officer; breakage; final disposition of an unexpendable item of property.

3. A man is brought to a naval hospital from ashore who has been fatally injured in a fight while on furlough; what clerical procedures are necessary for his admittance, and in connection with his subsequent death and disposition.

4. In case of a fire in a naval hospital what papers would you endeavor to save first from the clerical offices.

5. Name the annual appropriations pertaining to the Medical Department and give an example of an item of expenditure under each appropriation.

6. Name the principal sources of information from which you would obtain a knowledge of the procedures required in equipping the medical department of a transport.

7. Name the Bureau of Medicine and Surgery forms you would use in the following cases: (a) Admission of a patient with venereal disease; (b) transfer of medical stores from one medical officer to another; (c) death of an officer of the Navy in action; (d) enlistment of a hospital apprentice; (e) transfer of a patient to the Government Hospital for Insane.

8. Write a sample day's entry in the medical journal of a cruising vessel.

9. Write an official letter requesting permission to change a partition in the sick bay, in which you refer to two other letters previously written and inclose two estimates.

10. What is the difference between Navy Regulations and Naval Instructions and General Orders; between Naval Courts and Boards.

To which of the above publications would you refer for: (a) Instructions in regard to the correct methods of preparing correspondence; (b) rules governing the medical department of a ship; (c) clerical procedures necessary in holding a deck court-martial.

PERMANENT APPOINTMENT AS CHIEF PHARMACIST'S MATE.

Bureau of Navigation's Circular Letter 73-18, of April 22, 1918, gives commanding officers authority to issue permanent appointments

at discretion to men qualified, under existing instructions, by examination and length of service. From Bureau of Navigation's Circular Letter 87-18, of May 17, 1918, the following description of a chief pharmacist's mate, permanent appointment is quoted:

A chief pharmacist's mate (permanent) should be not only so well trained that he is able to pass the comprehensive oral, practical, and written examination required, but he should in addition be one who has a particular fitness for the Hospital Corps. He should be a man who has the force of character necessary to control men and to maintain discipline. He should have shown by his conduct a good example of subordination, courage, zeal, neatness, and attention to duty, and he should have convinced the medical officers with whom he is serving that he is capable of taking charge of hospital corpsmen at drills, of controlling their work, and planning details for their employment within the field expected of a chief petty officer.

THE NAVAL PHARMACIST.

At present no examination is contemplated for a permanent appointment to the warrant grade. There is, however, opportunity for enlisted men to be examined for provisional appointment to warrant grade and for temporary and provisional warrant commissions. A letter on this subject, called Bureau of Navigation's Circular Letter No. 121-18 tells the way in which an enlisted man may be considered for such appointment. Bureau of Navigation's Circular Letter No. 87-18 gives the following description of the warrant grade of pharmacist. If you are a pharmacist's mate first class, or chief pharmacist's mate now, read Naval Regulations No. 3317 (2) and find out how you must fit yourself to become a successful warrant pharmacist.

A man eligible to be examined for the warrant grade of pharmacist should in addition to his eligibility as determined by the Navy Department, be first a well trained, experienced, capable and dependable chief pharmacist's mate who has a thorough and complete knowledge of the clerical duties of the medical department, of the management of sick bays and hospital wards and one who can demonstrate by an oral, written and practical examination, a thorough knowledge of pharmacy, materia medica, toxicology, chemistry, minor surgery, hygiene, and the examination of foods. He should be required to demonstrate both practically and theoretically, a thorough familiarity with the current pharmacopœia, more particularly its pharmacy and materia medica. He should have a knowledge of chemistry sufficient to enable him to make qualitative analyses, uninvolved volumetric quantitative estimations and urinalyses. He should have a knowledge of minor operations, applications of splints, bandages, etc., and he should be able to show that he is well informed regarding the commissary duty at hospitals, and further to show his ability in the inspection of foods, such as meats, fish, poultry, etc., and the determining of preservatives and adulterants in milk, butter, jellies, coffee, sugar, and canned vegetables and fruits.

PROMOTIONS.

Bureau of Navigation's Circular Letter, 87-18, of May 17, 1918:

The bureau can not too strongly emphasize the importance of a thorough and effective examination prior to advancement in the Hospital Corps, because frequently hospital corpsmen in the upper ratings are called upon to meet medical and surgical emergencies alone, and to act independently of medical officers to preserve life and to care for the sick and injured, and the bureau desires that when medical officers recommend hospital corpsmen for advancement in rating, they keep ever in mind the high standard of professional ability so necessary for hospital corps ratings.

The bureau considers that hospital corpsmen of the Naval Reserve Force and National Naval Volunteers should be held to exactly the same standard of professional competence that is or may be required for the Regular Service.

Since the last issue of the "SUPPLEMENT," information has been received that the following men have been promoted:

TO CHIEF PHARMACIST'S MATES.

Alexander, V. H.
Bancroft, G. H.
Barnett, Dee A.
Bennett, H. M.
Bennett, T. J.
Bogard, D.
Boner, T. J.
Breul, V. E.
Brisson, A. F.
Brown, W. T.
Cabana, P. L.
Campbell, J. R.
Clymer, R. E.
Connell, L. M.
Cook, S. F.
Craig, C.
Creppel, W. B.
Curl, F. A.
Dale, W. C.
Davis, G. T.
Dean, W. R.
Dennis, H. J.
Dettner, P.
Dickson, L.

Dossin, C. A.
Dunlap, B. C.
Flash, T. F.
Francis, S. B.
Garber, D. W.
Glawson, J. J.
Goodwin, C. D.
Gore, H. C.
Gowder, H. C.
Griffin, A. F.
Grimes, Will.
Grinnan, H. D.
Gullufsen, G.
Henderson, J. V.
Henrich, E. T.
Herndon, J. A.
Hodges, J. R.
Holmes, E. B.
Hughes, S.
Huguenin, E. D.
Jarvis, H. W.
Jeffries, W. B.
Johnson, C. F.
Julian, E. V.

Kahn, Irving.
 Kipp, R. H.
 Knepley, W. E.
 Kriete, J. H.
 Krone, D. N.
 Lance, L. H.
 Lanham, F. S.
 Lawrence, G. M.
 Laymon, W. A.
 Lemke, G. F. W.
 Mason, R. K.
 Moody, J. A.
 Moore, E. M.
 Moore, T. G.
 Morgan, W. A.
 Mullins, M.
 Nichols, F. C.
 Olinger, J. B.
 Osborne, L. H.
 Owings, C. B.
 Parker, J. F.
 Partian, T. J.
 Patrick, R. A., jr.
 Paul, E. F.
 Perry, W. E.

Peterson, C. D.
 Point, L. J.
 Rickard, G. F.
 Roberts, J. O.
 Robbins, M. W.
 Rollins, H. F.
 Schulze, F. H.
 Senter, P. V.
 Simpson, J. F.
 Slack, G. J.
 Smith, H. J.
 Solleridge, S.
 Stahl, W.
 Stamler, D. A.
 Stevens, W. N.
 Summers, R.
 Thompson, R.
 Turney, H. L.
 Wadsworth, D. E.
 Walker, H. C.
 Webb, J. A.
 Wentworth, C. E.
 Woodson, M. S.
 Young, A.
 Zeisig, W.

TO PHARMACIST'S MATES, FIRST CLASS.

Adams, A. S.
 Adams, D. H.
 Adams, J. H.
 Andrews, H. W.
 Baird, M. K.
 Ball, F. O.
 Bancroft, G. D.
 Barnett, Dee A.
 Bates, A. W.
 Beach, A. C.
 Beauregard, J. G. A.
 Bell, C. E.
 Bennett, T. J.
 Bewlay, F.
 Beyer, G. L.
 Blair, F. M.
 Bond, G. E.
 Bowman, C. C.
 Brewster, K. C.
 Brinkman, A. J.
 Bromilow, R. M.
 Brown, T. C.
 Burdett, S. F.
 Cameron, K. O.
 Capito, J. A.
 Carlson, J. E.
 Cauveren, D.

Chapman, G. McK.
 Cleary, E. W.
 Cohrs, H. J.
 Cone, J. H.
 Cooney, E. J.
 Crable, S. B.
 Crawford, W. E.
 Crum, W. J.
 Devenney, J. J.
 Dick, W. E.
 Doty, L. L.
 Downer, D. G.
 Drake, C. W.
 Draper, N. M.
 Dreyer, W. A.
 Drown, M. D.
 Durham, C. R.
 Dyer, D. H.
 Eads, J. T.
 Elliot, V. B.
 Eselhorst, A. R.
 Felts, E. H.
 Finney, M. A.
 Fritz, P. S.
 Gammill, L. C.
 Gardiner, C. R.
 Gaw, C. S.

Gholson, H. A.
 Gould, H. K.
 Granger, E. E.
 Gross, H. A.
 Gullufsen, G.
 Gwynn, A. S.
 Hanson, L. W.
 Harper, R. B.
 Hass, E. H.
 Hickley, E. F.
 Holt, E. R.
 Holton, C. O.
 Horning, B.
 Huntsinger, F. O.
 Joab, A. H.
 Johnson, C. C.
 Jones, T. H.
 Kahn, Irving
 Kane, C. E.
 Kastner, O.
 Kirkpatrick, O. Y.
 Kirby, R. H.
 Kitchin, H. L.
 Knisely, B. A.
 Koller, W. W.
 Lambert, O. D.
 Laney, A. D.
 Laugan, M. J.
 Laurence, J. A.
 Leser, R. J.
 Lewis, W. C.
 Livingston, R. W.
 Logan, J. E.
 Long, W. A.
 MacPherson, R. G.
 McCaughan, S. K.
 McClendon, S. J.
 McCormick, D. C.
 McEachern, J. D.
 McManus, W. F.
 Marsh, N. S.
 Masterson, D. P.
 Mellville, S. F.
 Middlebrooks, C. A.
 Miller, G. A.
 Mitchell, C. M.
 Moak, C. A.
 Moore, C. B.
 Nickols, F. C.
 Palmer, V. T.
 Palmer, W. E.
 Parks, M. B.
 Peterson, O. T.
 Peterson, P. D.

Peterson, R. E.
 Phelps, T. Z.
 Phillips, M. L.
 Pickering, J. L.
 Polk, L. L.
 Prather, J. A.
 Purkerson, C. N.
 Ralls, J. P.
 Ray, C. A.
 Ray, T. H.
 Roberts, H. C.
 Roberts, J. O.
 Robichau, W. D. A.
 Robinson, E. E.
 Rochford, G. A.
 Roudolph, R. W.
 Routh, J. S.
 Russell, C. F.
 Sagley, G. R.
 Schlosser, R. B.
 Shadel, P. M.
 Smith, J. E.
 Spalding, J. H.
 Staads, J. A.
 Staley, E. J.
 Steele, L. A.
 Steffen, A. A.
 Sullivan, R. E.
 Thompson, C. H.
 Thorsen, H. M.
 Thorum, A. A.
 Tracy, L. B.
 Troy, J. J.
 Tucker, J. L.
 Vallier, M. O.
 Vick, L. J.
 Vickery, W. H.
 Von Lanken, J. A.
 Walker, D. W.
 Wall, J. P.
 Walsh, Wm. H. J.
 Webb, J. A.
 Weikel, L. H.
 Wennerlind, E. W.
 Whaley, W.
 Wheeler, H. M.
 Williams, E. B.
 Williamson, M. K.
 Wilson, R. J.
 Wynne, J. H.
 Zeisig, W.
 Zelanka, J.
 Zeller, L.

The following men have been recommended by the board by which they were examined, but as yet the Bureau of Medicine and Surgery has received no information of their actual promotion:

TO CHIEF PHARMACIST'S MATES.

Andrus, J. A.	Mahoney, C. O.
Brown, F. M.	Meese, C. E.
Brown, M. D.	Miller, J. I.
Brown, Michael	Moore, E. S.
Carstensen, E. H.	Mortiz, W. E.
Chamberlain, T. T.	Newland, V. E.
Clark, C. P.	Owens, C. H.
Cochrane, R. S.	Peterson, R. C.
Cole, J. E.	Piland, E.
Cook, C. E.	Poe, F. C.
Cornell, Wm.	Ramsay, J. R.
Cuson, C. V.	Roberts, S. J. jr.
Dellinger, H. H.	Rollins, R. H.
Dent, M. E.	Rounds, H. B.
Faublon, W. D.	Sanford, C. W.
Fox, T. F.	Saunders, T. McL.
Freem, E. L.	Scholsser, R. B.
Gannon, J. J.	Sperling, M. W.
Gault, W. A.	Stanley, A. E.
Gwynn, A. S.	Stark, F.
Hartman, A. M.	Stommel, C. J.
Hayden, W. H.	Sziklay, E.
Henry, M. L.	Tousic, T.
Hollva, W. S.	Ward, R. E.
Holtry, F.	Warren, J. N.
Howley, J. P.	Waters, R. A.
Jacobsen, A. P.	Watson, C. A.
James, R. W.	Wills, O. L.
Johnson, T. C.	Yates, C. L.
Kellogg, I. L.	Young, B. P.
Kraft, F. H.	

TO PHARMACIST'S MATES, FIRST CLASS.

Allen, William,	Clement, C.
Anderson, C. S.	Culp, D. H.
Beach, W. R.	De Witt, D. V.
Beavers, T. N.	Dorenbom, J.
Blake, J. H.	Feinne, J.
Blakley, H. G.	Ford, C.
Bolstad, L. H.	Frazier, G. G.
Brady, A. J.	Friedman, H.
Butler, D. C.	Frosbang, J. A.
Caiger, A. E.	Garber, D. W.
Carlson, F. J.	Goggin, J. D.
Carstensen, E. H.	Grove, H. A.
Castillon, L. A.	Hancher, L. A.
Clark, T. H.	Hill, F.

Hill, James A.
 Hutchins, C. L.
 Jackson, P. L.
 Jamison, R. R.
 Johnson, R. R.
 Land, J. R.
 La Plant, William.
 Latta, E. C.
 Laurence, F. A.
 Manuring, F. G.
 McCoy, C. L.
 Mattingly, C.
 Mentzel, E. H.
 Nickols, F. L.
 Owens, H. T.

Paulsen, C. A.
 Regnier, L. A.
 Ross, J. L.
 Rotchford, F. H.
 Sanders, J. J.
 Saunders, T. McL.
 Schulze, F. H.
 Scruggs, A. C.
 Simmers, G. R.
 Smith, T. R.
 Stedje, R. R.
 Stonnerock, E. H.
 Weiss, P. F.
 Willoughby, L. B.

CORRESPONDENCE COURSE FOR NAVAL PHARMACISTS.

PROBLEM NO. 3.

You are assigned as the commissary officer of a naval hospital going in commission. The galley and mess hall equipment of stationary type (ranges, steam table, benches, tables, etc.) is furnished and in place. You have no mess gear and no kitchen cooking utensils (pots, pans, carving knives, etc.) You have no provisions. There is no force assembled to operate your department. You have two weeks in which to place your department in commission, and you will have to care for 500 patients, 100 hospital corpsmen, 50 nurses, and 25 civilian employees outside of your own commissary employees. The nurses have their own commissary department but you are going to supply the provisions. Your equipment is of the latest, and you are going to use the cafeteria system in your main dining room for patients, hospital corpsmen, and civilians. It is assumed that you can obtain everything you want in the way of help and other requirements without delay.

- (a) How would you proceed to get your department ready?
- (b) How would you obtain all of your supplies, giving sources and methods of obtaining them?
- (c) How would you organize your commissary force?
- (d) What books would you keep and what other clerical duties would devolve upon you?

NOTE.—Articles required need not be enumerated except by class. Under commissary force state how many and in what ratings they would be employed. It is assumed, except for people to act in a supervisory capacity, you would employ civilians. In answering this question you can follow question No. 2 in which you have planned a commissary building and use that as a basis from which to start your organization.

(a) In placing the commissary department of a naval hospital in commission our first thought should be to go at this work in an intelligent, systematic manner. Efficiency can be only obtained at the price of constant watchfulness, strict supervision, and coordinated effort, and little can be accomplished if the above are neglected, even with the best of equipment, in starting a new organization. To coordinate activities and to make an orderly start it is a good plan to prepare a scheme of action in the form of a short synopsis, somewhat as follows:

1. Survey of hospital with special reference to commissary work.
2. Assignment of enlisted personnel to duty.
3. Employment of civilian help and their preliminary training.
4. Procurement of supplies.
5. Organization of receipt and issue system.
6. Opening of clerical procedures.

The survey of the commissary facilities of the hospital is greatly simplified in this case since we are able to start with a thorough knowledge of the main commissary establishment, having in paper No. 2 planned and partly equipped a commissary building. There remain, however, in the hospital compound kitchens for special purposes and other minor establishments devoted to commissary work which, while principally concerning us only in the matter of supplies, are also in other ways dependent for their success upon our department.

Having familiarized ourselves with the situation, as described above, and having laid out a plan of action, we can now proceed with discussion of paragraph (b) of the problem.

(b) The supplies required for our purpose are divided into several classes. First of all, we should procure the necessary additional equipment. This would consist principally of kitchen utensils and mess gear, as enumerated in bureau's Circular Letter No. 125935-1 of October 1, 1916, and obtainable on stub requisitions from the supply department. In the preparation of stubs for these articles the number of people to be subsisted and the nature of the articles must be our guide as to the amounts needed. Twenty-five per cent over the actual requirements in articles of breakable nature, such as chinaware, and a 10 per cent excess over actual needs in others would appear to present a safe margin. However, even a greater excess would not necessarily impute extravagance, as none of these articles can be said to deteriorate with age if properly cared for. Cleaning gear, garbage cans, cooks' aprons, caps, mess jackets for waiters, etc., are carried and obtained from the general hospital issue room on requests approved by the executive. While all nonexpend-

able articles are carried on the property cards of the hospital, it is a good plan to carry the commissary property in a separate storeroom, with a duplicate card index for the information of the commissary officer. A few minor articles may be required for such places as the special diet kitchens. There is, however, such an ample variety of kitchen utensils and mess gear on the above-mentioned list procurable from the supply department that it is rarely necessary to submit open-purchase requisitions.

Having completed the requirements for additional equipment the next consideration should be the procurement of provisions. These are obtained on requisitions prepared by the Bureau of Supplies and Accounts and on contracts and formal orders placed by that bureau, partly from the supply department, partly from contractors. The bulk of groceries is procured from the supply department on Form 30a. Some groceries are obtained from contractors direct but these usually consist of special articles for hospital use. Meats, vegetables, and other perishable stores are procured from contractors, as needed, on orders which as a rule have to be placed at least 48 hours in advance of delivery. The preparation of a bill of fare should precede our orders. Staple groceries should be ordered in sufficient quantities to last a month. It is a good scheme to prepare a requisition on the supply department once a month for groceries. Such a procedure saves time and labor and gives one a clearer idea of periodical needs. In ordering fresh provisions, under the storage conditions outlined in paper No. 2, meats, eggs, butter, vegetables, and fruits could be ordered three times weekly. It is better to do this than to have small daily deliveries. However, daily deliveries must be made of milk and bread. In most of our hospitals the inspection of fresh provisions has been placed under the Department of Agriculture. This method has been found very satisfactory. If such is not the case and the inspection devolves upon the commissary officer he should make a study of the specifications as issued by the Bureau of Supplies and Accounts and follow them closely. The Navy Specifications cover this field very thoroughly and should be adhered to and rigidly enforced. In places where inspectors are stationed it is customary to make out orders in triplicate, one for the contractor, one for the inspector, and one for the hospital files. In emergencies telephone orders can be placed but they should be always confirmed by a written order. In this connection it may be well to say a word as to the care necessary in storing supplies of perishable nature. Cleanliness is the most important matter to be observed. Food attracts mice, rats, roaches, flies, and other insects, and storerooms should be kept clean and free from pests. Cleanliness is their greatest enemy, therefore storerooms and ice boxes should be kept scrupulously clean and well ventilated.

(c) The commissary force for our establishment would ordinarily consist of the following to care for the number of people we have to subsist:

Supervisory force: 1 chief pharmacist's mate, 1 pharmacist's mate, first class.
Kitchen: 1 head cook, 4 assistant cooks, 1 butcher, 2 kitchen men, 1 vegetable man.

Dining room floor: 6 mess attendants, 1 serving station man, 2 dishwashers.

Storerooms: 2 storeroom keepers.

This force should be ample to handle the number of people to be subsisted, as stated in the problem, and even take care of a number up to 1,000. Over that number a slight increase in that force would be necessary. While the amount of this force has been based on previous experience, a good deal depends on the coordination of their work, on the effort of the individual, the working conditions, and the mechanical equipment.

To secure this force of civilian employees it would probably be necessary to advertise or to have recourse to employment agencies. Care should be exercised in selecting competent people and their credentials should be carefully examined. The class of work which a man has done should come in for consideration. Institutional work differs greatly from work of similar nature in restaurants and hotels. Special attention should be paid to the selection of leading men for the several departments. A certain number of these men should report for duty in advance of the actual commissioning of the place to familiarize themselves with the equipment and intended routine, and all would have to report at least three days in advance to get everything in readiness; but of course all this would depend greatly on the manner in which the man in charge would proceed with the execution of details of the whole plan.

The duties of the enlisted and civilian force are indicated to a great extent by their occupational calling, but a short résumé of their duties may be helpful and instructive:

Supervisory force:

Chief pharmacist's mate.—General supervision under commissary officer.

Clerical duties.

Pharmacist's mate, first class.—Assistant to above.

Civilian commissary force:

Head cook.—Responsible for kitchen and preparation of food.

Assistant cooks (4).—Assistants to head cook. Three of these detailed to serving station at meal times.

Butcher.—Care of butcher shop. Preparation of meats for kitchens.

Vegetable man.—Care of vegetable preparation room. Preparation of vegetables and fruits.

Kitchen men (2).—General work around kitchen, cleaning, washing of utensils, etc. Care of ice boxes.

Storeroom keepers.—Receipt and issue of stores. Care of storerooms.

Mess attendants (6).—Care and cleanliness of dining room. Service during meals. One for chief pharmacist's mate's dining room.

Serving station man.—Care of serving station. In charge of food service during meals.

Dishwashers (2).—Care of dishwashing room and washing of mess gear.

Besides the above work a general cleaning detail of mess attendants and men in the lower ratings to take care of the several rooms designated for the commissary force and immediate vicinity of the building is required and must be arranged with due regard for their other duties. The working routine should be carefully studied and changed as conditions demand. It is not to be expected that everything will run smoothly from the start. No matter how carefully plans are laid, it will be found that adjustments have to be made from time to time to meet changing conditions, that the help will have to be shifted to make the best use of some men who show special aptitude for certain work.

In this connection it may be well to make a few remarks about the service required at mealtimes. To get the best results from the cafeteria system the help must be trained to work quickly and smoothly. With the number of patients and hospital corpsmen to be subsisted, it is necessary to make arrangement for early messes for men on watch and for segregation of the personnel and patients in different messes. This can be accomplished easily by assigning them to different tables, which can be conspicuously numbered.

(d) The principal clerical duties connected with the commissary department consist of such as required in the obtaining of supplies and which have been explained under (b) and in keeping record of receipts and issues. The record of supplies is maintained through the Daily Receipt and Expenditure Voucher and the Commissary Ledger. The Ration Memoranda, M. & S. Form 124716, furnishes daily information as to changes in the personnel in so far as they affect the commissary department and enables us to keep an accurate check on the quantities of provisions required from day to day, and in conjunction with the ledger as to the cost of the ration. Detailed instructions regarding these forms are part of the Manual for the Medical Department, paragraphs 1411 to 1415, inclusive, and should be carefully studied and followed. Public bills for commissary supplies are another important feature of the clerical work as the commissary officer is responsible for their correctness to the commanding officer. Besides the above there are unofficial forms which the ingenuity of the officer in charge must supply to meet local conditions, such as order blanks for contractors and such forms as are required by the receipt and issue of stores, working details, etc., forms outside of those official and mentioned above.

PROBLEM NO. 4.

You are in charge of the commissary department of a naval hospital. The commanding officer wishes you to apply the rules and suggestions laid down by the United States Food Administration for the conservation of food in so far as they are compatible with the welfare and comfort of patients.

(a) What are your ideas along these lines?

(b) How would you apply them and what means would you employ to get the best results?

ANSWER TO NO. 4.

Our problem is to consider the question of conservation from the viewpoint of a naval hospital and state our views as to the methods we would use to apply the orders of the Food Commission to our hospitals. At the outset, and throughout our consideration of this problem, it is very necessary that we keep in mind the fact that the hospital's paramount reason for existence is to cure the sick, and that plenty of wholesome, nourishing, well-balanced food is a vital necessity to most convalescents. No restrictions of any sort should be placed on special diets, other than to prevent waste.

It is only natural that the man who does not bear the actual expenses of the table will be more wasteful than the one who has to reach down in his pocketbook to defray the cost of his food. Our men in the hospitals are in this situation and we must therefore consider what means are most liable to bring the desired results. The sailor is not wasteful through intention, but he may at times be thoughtless and careless. Therefore there are two methods which must be applied to reach him; first along educational lines which will appeal to his patriotism and teach him the importance of food conservation, and second, a certain amount of enforced conservation. Experience has shown that a combination of these two will bring forth most encouraging results.

At one of the largest naval hospitals the cafeteria system was started when it was seen that the facilities at hand, especially the dining-room space, were insufficient to handle the greatly increased number of patients. A steam table was installed at the entrance of the mess hall with dishes interchangeable with the kitchen steam table and the food was brought in fully prepared for issue. It took only a very short time to educate the men to the service, and after the first few days when the usual remarks on an innovation were heard everything went very smoothly in so far as the service was concerned. It was, however, noted that there was a good deal of waste. To meet the cry of insufficient food so apt to be raised in our service should any rationing be attempted the attendants were

instructed at first to issue large portions. It was discovered that this was the cause of waste. A man although instructed to tell the attendant if he thought he was getting more than he could eat would hardly ever raise his voice in protest. Then the method was changed and small portions were given, but the men were instructed that they could come back for more helpings as their appetite demanded. This had the desired effect and the wastage has decreased gradually so that now there is practically none, except such as is unavoidable due to the conditions which naturally are to be expected in a hospital. The men were told that it was not the desire to curtail their rations, that there was plenty of food, and that they were welcome to all they could eat, but that waste in the present national emergency was criminal, and that a man wasting food is injuring the country and giving vital assistance to the enemy. Use was also made of the bulletin board, and the Food Administration was asked for posters. Timely and pertinent clippings from papers were posted on the bulletin board as well as notices calling attention to any waste observed. As a demonstration of waste in bread all left overs were collected in a box and exposed to view so that every one in the mess hall could see the amount wasted. This had the effect that the waste in bread has been practically eliminated.

The compulsory measures adopted to prevent waste were as follows: First, naturally, should come the bill of fare, which should conform as much as possible to the instructions of the Food Commission. These in the main look toward the saving of transportable foods for consumption by our allies and our Army and Navy abroad and the greater use at home of perishable provisions. With this end in view, smoked meats, ham, and bacon were practically eliminated from the hospital menu, puddings and pies requiring cereals, sugar, and lard were dispensed with, and fresh fruit was substituted for nearly all dessert, and the men enjoyed the change.

Another compulsory measure was in regard to the sweetening of coffee and tea, which was done before service. This procedure reduced the use of sugar by very nearly 50 per cent. Before this was adopted cups would come in with thick deposits of sugar at the bottom.

The value of mechanical equipment in the saving of food can be hardly overestimated. It would lead to an article too long for this purpose to go into detailed account, but a few examples can be quoted.

The bread-cutting machine and the mechanical slicer for meats both effect a great saving. In cutting bacon, for instance, with the slicing machine, a saving of about 25 per cent was noted, as compared with the hand method, in addition to which even, thin, appetizing slices were obtained.

A great saving has been effected by the use of a butter-serving machine. In fact, this saving is very noticeable. Until this machine was acquired, serving each man as he would enter the mess hall with a patty of butter, 5 to 7 pounds more butter were used at a meal for 400. A saving of at least 15 pounds a day, when butter is served at each meal, is certainly considerable.

For the last four years this hospital has not bought lard. All the meat trimmings are rendered in steam roasters and clarified, and a very fine grade of fat is obtained for all cooking purposes. The amount of fat obtained in this way is not only sufficient to satisfy all of the demands for lard at the institution, but leaves sufficient to prepare a great amount of soap for cleaning purposes.

In naval hospitals there should be but rarely need for the use of canned foods. Experience teaches that canned food (especially vegetables and fruits) is much more expensive than the fresh articles, and under present conditions it should be our effort to not only use fresh provisions of that type to the exclusion of canned provisions on account of the economy involved, but also to preserve the canned goods for the use of our allies and expeditionary forces especially.

Considerable saving can also be effected in the use of "left overs" from a meal. Meat which can not be carved for serving can be utilized in croquettes and hashes; vegetables can be used for soups and stews. There is practically nothing of food value left over from meals which can not be utilized for some purpose.

The garbage can should be watched closely because that is where the evidence of waste will appear. A clean plate and an empty garbage can should be our slogan and these are only attainable by constant watchfulness, by resourcefulness in the use of food materials, and by absolute elimination of waste.

While no attempt is made to diminish the ration and no effort is spared to give the sick everything needed, the suggestions of the Food Commission as applied have proved to be not only a means of saving and conservation, but they have in no manner affected the contentment and well being of the personnel.

It may be that something can be done by cultivation of available unused land, using convalescents.

Frying can well be reduced to a minimum, thereby saving fats and producing more healthful food.

The total quantity prepared, and the quantity of the different articles of food should be constantly approximated to the consumption, and in this matter a harmonizing of the liberty list and the quantity of food cooked could be made a matter of considerable importance in regard to saving.

PROBLEM NO. 6.

You are detailed to take charge of the organization of the entire clerical department of a new naval hospital with a capacity of 1,000 patients. Two offices are at your disposal.

How would you organize your clerical force and what would be your general plan of conducting the clerical work?

ANSWER TO NO. 6.

In the present emergency when the change of personnel in the naval hospitals is so frequent it rests upon the pharmacist to organize and train the clerical force with a view to having at all times the nucleus of a trained force regardless of the number of corpsmen transferred. For this reason it will be necessary to utilize the services of yeomen and yeowomen of the Reserve Force. Women are to be preferred as they are not subject to transfer to sea and are more apt to be content to remain in one place; moreover, the services of trained office women are usually easier to obtain than the services of well-trained men.

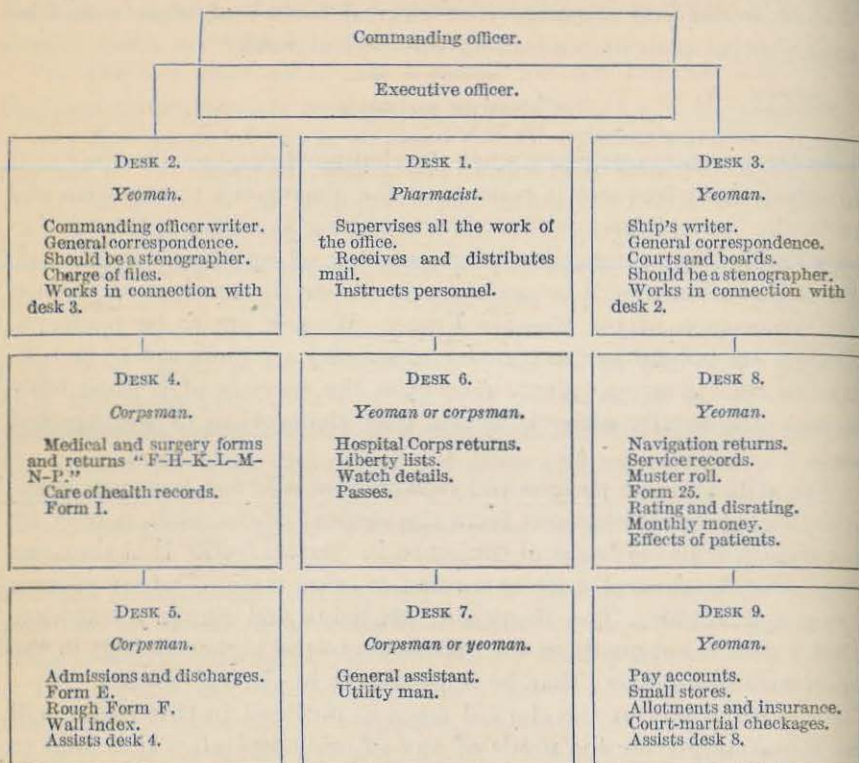
The utilization of yeomen and yeowomen should not, however, eliminate the hospital corpsmen from the clerical offices, as it is only by constantly training hospital corpsmen in clerical duties that they can take over the clerical work at sea and at other stations where yeomen are not available. The Bureau of Medicine and Surgery considers that a man is not qualified for promotion to the higher ratings in the corps unless he shows that he is proficient in clerical work.

It is believed that the clerical force as outlined in this paper will be found ample for the needs of any of our hospitals. It is well to remember that overcrowding in an office decreases the output of work and increases the chance for errors in direct ratio to the excess number employed. It might be found possible to cut down the force outlined by one or two persons in each office, but owing to the fact that part of the office force is practically always under training it is well to keep an understudy for each desk. The corpsmen under training in the office should not be considered as part of the office force and they should alternate to other details once a month. At some hospitals the hospital corpsmen assisting in the office act as mail orderlies and are allowed to assist and gain instruction in the office between mail trips.

The outline which follows is merely tentative as regards the ratings of the personnel employed; selection should be made by the pharmacist as to the best person for each desk, but it is well to remember that hospital corpsmen need all the training they can get in the preparation of returns, in property accounting, and preparation of requisitions and vouchers.

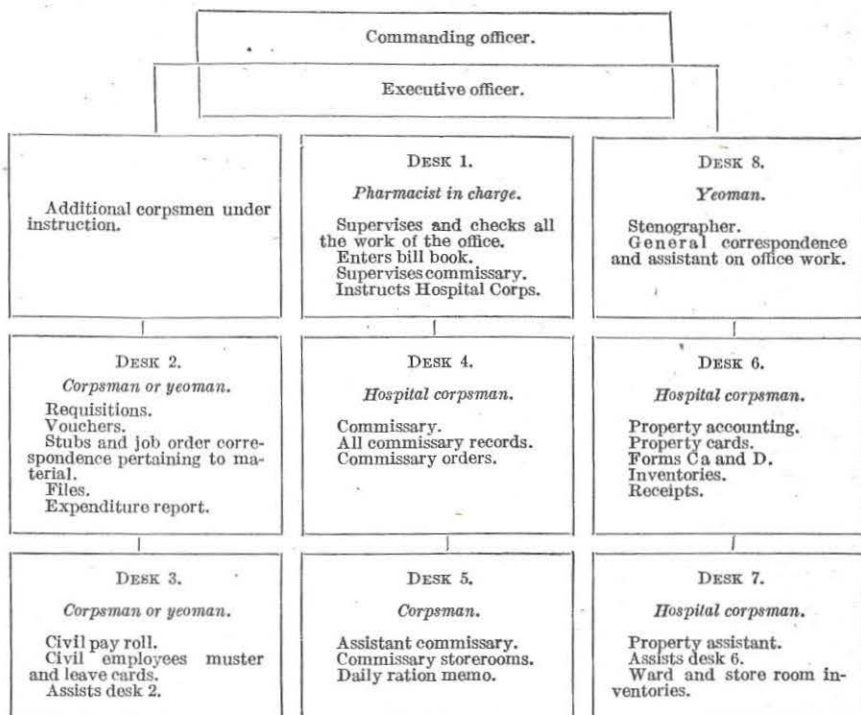
It will be noted in the outline that an assistant or understudy is provided for each division and in case of the absence of any of the office force his special work can be carried on by the assistant.

PERSONNEL OFFICE.



As many additional corpsmen under training as may be practicable.

MATERIAL OFFICE.



The storeroom keepers and entire commissary force come under the supervision of the pharmacist in this office unless there is a special commissary officer, in which case desks 4 and 5 are eliminated from this office.

TORPEDOED AND SUNK.

When the German submarines made their attacks on ships off the eastern coast of the United States, one of the pharmacists of the Hospital Corps of the Navy was coming north from his station in the West Indies on the *Carolina*. This ship as is generally known was torpedoed and sunk. When this pharmacist was landed with the other passengers, he sent the following letter and it is published in the SUPPLEMENT as an indication of the spirit which wins:

318 E. TREMONT AVENUE, THE BRONX, N. Y.,

June 6, 1918.

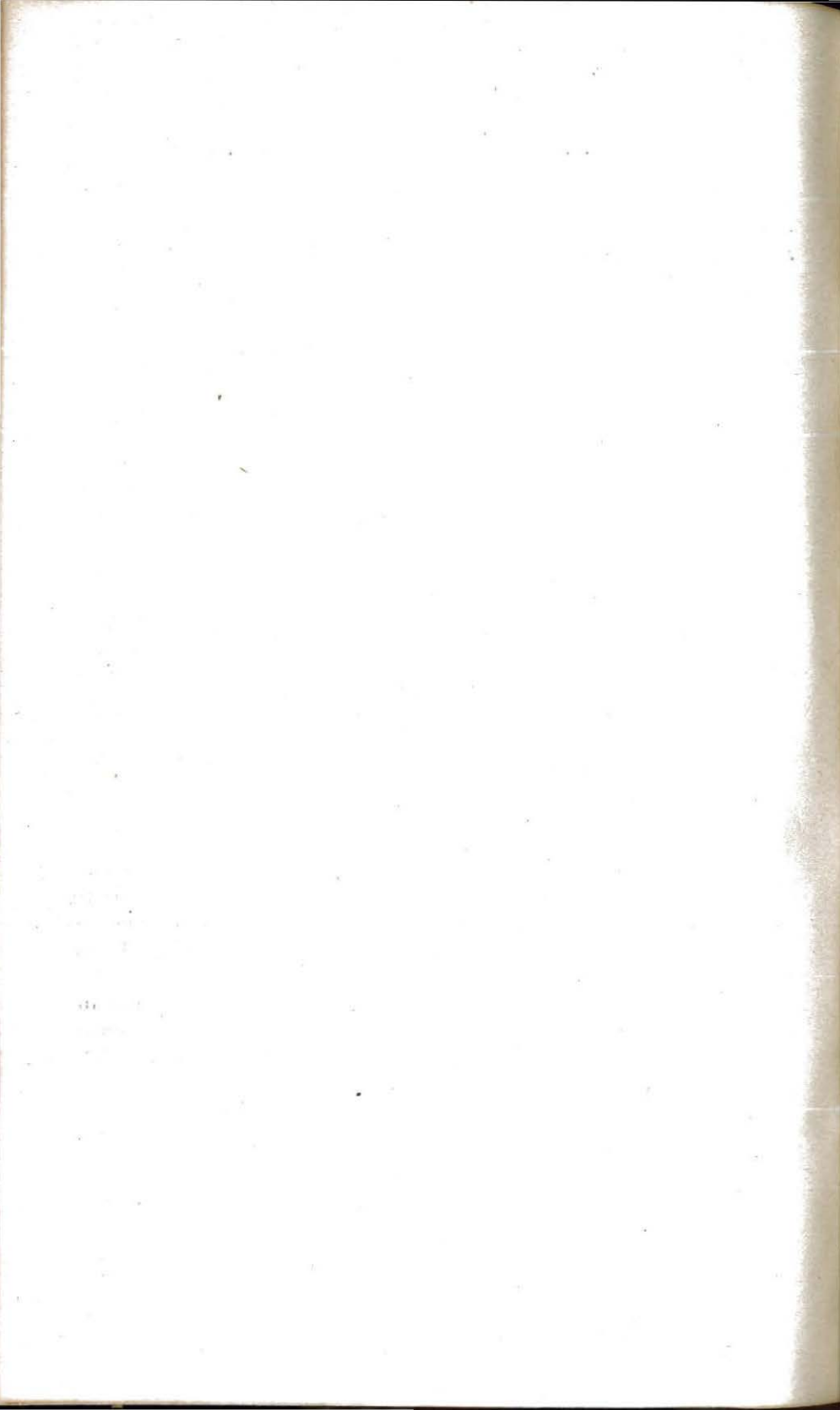
DIRECTOR CORRESPONDENCE COURSE FOR PHARMACISTS,

Washington, D. C.

DEAR SIR: This is to inform you that all the papers in connection with the course that I received from you to date were lost on the *Carolina* when she was sunk last Sunday evening. I was a passenger on her traveling to New York in obedience to orders to report to commandant, navy yard, New York. Please send duplicates of questions and answers to me at above address. The last question I received was No. 6, received at St. Thomas, V. I., May 25, 1918.

Yours, truly,

CHARLES C. THOME, *Pharmacist (T), United States Navy.*



CONTRIBUTIONS.

Save your copy of the SUPPLEMENT and use it for reference. All information contained in its pages may not be of immediate value but may be just what you need at a later time. Each number contains information not found in the "Handy Book."

The contributions desired are articles dealing with measures and methods of treating the sick and injured, teaching and training, special duties, suggestions for improvement in any line of Hospital Corps work; pictures illustrating Hospital Corps activities; the corps on detached duty, on foreign stations, at training schools, landing parties, transportation of sick and injured, surgical X-ray and laboratory procedure, tropical duties, war pictures illustrating the work of the Hospital Corps; in short, any pictures which will be of interest and instruction to the corps.

The editor has been gratified by the interest already taken by hospital corpsmen and others who have submitted articles and pictures for publication in the SUPPLEMENT. It is hoped that the interest will continue and that hospital corpsmen, doctors, nurses, dental officers, will all remember that they can talk to one another in the pages of this publication in a way which will be of benefit to all.

Several contributions have been received which, because of limited space, could not be published in this number.

The SUPPLEMENT will publish only material that is of special interest and benefit to the Hospital Corps, the editor reserving the right to turn over to other Navy magazines or papers material which is of interest to the Navy at large, rather than to the Hospital Corps in particular. ~~Owing to the uncertainty of mail transmission~~ the editor does not assume responsibility for the return of pictures, articles, etc., contributed.

Endeavor will be made to answer through these columns any inquiries submitted by hospital corpsmen that are of general interest to the corps. Strictly personal inquiries will not be answered. Unsigned letters will not be considered.

Address all communications to:

EDITOR OF THE SUPPLEMENT,
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Washington, D. C.

Barry

8833 8543 33

07/13/05

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